HubIT

TECHNOLOGY WITH AND FOR SOCIETY

TECHNOLOGY WITH AND FOR SOCIETY

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1. EXECUTIVE SUMMARY

This document describes the "Initial European Framework Model" that in the remaining of this document will be referred as Framework Model (FM). This stage of the FM, as planned in the Grant Agreement, develops the idea concept of the FM for responsible ICT innovation produced in Deliverable "D2.2 - Idea concept of the European Framework Model for responsible ICT innovation", taking into consideration and integrating input collected from stakeholders during the expert group workshop held in Rome in March 2018 with feedback from the project consortium.

As already specified in Deliverable "D2.2 - Idea concept of the European Framework Model for responsible ICT innovation", the FM consists of a **comprehensive**, **coherent** and **interlinked set of resources** available online for ICT professionals and funders as well as SSH researchers and other societal actors with an interest in steering ICT Research and Innovation (R&I) towards more responsible outcomes.

The preliminary set of 10 resources proposed in "D2.2 - Idea concept of the EU Framework Model for responsible ICT innovation" was discussed comprehensively during the HubIT project meeting held in Rome on 19th and 20th of March 2018 and during the expert workshop held on 21st and 22nd of March 2018. After the expert workshop the FM was refined by the consortium based on experts' constructive feedback. In particular, the ten resources have been reduced to nine resources, as the resources "Fact Sheets and Policy Briefs" were unified into the resource "Policy Recommendations" and some of resources were re-named. In particular, "Concept of Responsible Research and Innovation informed by SSH in ICT" was re-named in "HubIT concept", "Matrix of the key challenges" in "List of the key challenges", "Best Practice Repository of responsible ICT research and innovation with SSH input" in "Good Practice Repository of responsible ICT research and innovation with SSH input", "Guidelines for Responsible ICT Research and Innovation informed by Social Science SSH" in "HubIT Guidelines", "Tool for assessment of RRI and SSH perspectives in ICT within an organisation" in "Assessment tool", "Key measurable success indicators" in "Key success indicators", "Virtual Matching Catalogue" in "Social Dashboard". Therefore, the nine resources are: HubIT concept; List of the key challenges; Ecosystem mapping; Good Practice Repository of responsible ICT research and innovation with SSH input; HubIT Guidelines; Assessment tool; Fact Sheets, Policy Briefs and Policy Recommendations; Key success indicators; Social Dashboard. These resources are integrated in the HubIT Platform, which is being developed for facilitating the understanding and use of the Framework Model. The Platform will represent the different resources using the concept of a City Metropolis.

This document provides a description of the Initial European Framework Model, describing each resource. ANNEX 1 describes how the expert workshop was organised and contains suggestions resulting from the workshop. ANNEX 2 describes a preliminary set of key measurable success indicators. Note that Annexes use the names of resources already used in the Deliverable D2.2 and in the expert workshop, and resources were named "tools", as renaming of the resources was done as final step in producing the Deliverable D2.3.

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2. INTRODUCTION

This document (Deliverable D2.3) is the result of the activities of Task 2.3 “Initial European Framework Model (FM) for responsible ICT innovation” targeted at refining the Framework Model, validating it and defining its content. It is connected to the Task 6.2 “HubIT online collaborative Platform” targeted at developing the visual and technical solution of the collaborative Platform providing access to the FM resources. The specification of each resource includes also details about its implementation in the Platform.

Pervasiveness of ICTs is producing deep innovations in our lives at social, economic, cultural and technological level and the HubIT project proposes the Social Sciences and Humanities (**SSH**) as “advisors” through RRI, informing and equipping the approach to ICT. This is called the “**SSH-RRI approach**” and it brings ICT research and innovation beyond the basic compliance to requirements, by encouraging a proactive critical accompaniment of technological developments informed by SSH expertise taking into account RRI criteria.

The SSH-RRI approach is acknowledged within the European Union research and innovation efforts as a method for mainstreaming SSH research across all topics of H2020 aiming at ICT-related research and innovation. RRI actions and SSH expertise are required to interact intimately with other disciplines to develop new knowledge, key competences and major technological breakthroughs as well as translating knowledge into economic and societal value.

The HubIT project, funded under the topic REV-INEQUAL-09-2017 is part of the overall RRI-SSH approach established by the European Commission, seen as "the pump" of the whole SSH-RRI effort in the ICT-related parts of H2020, activating the distributed effort and boosting a focused proactive effort. It is bridging the SSH community with the ICT-community, by bringing together ICT developers, SSH researchers and other stakeholders (e.g. Policy makers, civil society, etc.) across H2020 ICT-related projects and beyond. It supports SSH-RRI within WP16-17 ICT projects and to projects and stakeholders funded through other funding sources and building on their results.

The project is challenged with facing the following needs within the research and innovation ecosystem to ensure that RRI principles will be applied: 1) contribute to the high level of European research and innovation and ensure that H2020 funded projects and other EUICT related innovations are responsible, inclusive and aimed at reversing inequalities; 2) build a Hub that will activate and improve constructive and co-creative interactions between SSH and ICT disciplines in developing and implementing a shared vision of inclusive ICT research and innovation.

A preliminary idea of the Framework Model was defined in “D2.2 - Idea concept of the European Framework Model for responsible ICT innovation” Deliverable D2.2. The Framework Model (FM) is a set of resources, definitions and benchmarking guidelines, targeted at activating constructive interactions between identified stakeholders leading to a responsible approach to research and innovation through the uptake of SSH expertise and RRI actions. The concept of the Framework Model takes into account the requirements of an online collaborative Platform.

The idea concept was introduced to the Expert Group for consultation and inputs during the Expert Group workshop held in Rome in March 2018and the initial FM is the result at the end of the process that evolved the idea concept FM on the basis of the inputs coming from the HubIT consortium and the key opinion leaders and experts engaged in the workshop. As a next step, the final version of the European Framework Model will be released at month 36 in Deliverable D2.4: “Final European Framework Model”. In fact, the Framework Model will be continuously adjusted and improved by integrating the outputs from all the HubIT activities and the feedback resulting from the network engagement activities. T2.4 “The Final European Framework Model for responsible ICT innovation” will collect all these outcomes for producing Deliverable D2.4 which is due in Month 36.

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3. GENERATION OF THE INITIAL FRAMEWORK MODEL

3.1 FROM THE IDEA CONCEPT TO THE INITIAL FRAMEWORK MODEL

The HubIT project is developing and validating a European FM that includes concepts, definitions, tools, and guidelines (that we refer to in the remainder of this deliverable as resources) for taking into account RRI principles in ICT R&I. When completed, the FM will be a comprehensive, coherent and interlinked set of resources available online for ICT professionals and funders as well as SSH researchers and other societal actors with an interest in steering ICT R&I towards more responsible outcomes.

In particular, the FM is conceived to facilitate:

- Activities for embedding RRI into ICT innovation processes providing some useful examples
- The implementation and the governance of RRI into ICT innovation processes
- A global, coherent and shareable vision about inclusive ICT research and innovation
- Informed decisions on policies by using a set of provided assessment indicators
- Procedures for general public engagement

Therefore, the FM embeds knowledge and facilitates the mutual interaction among participants of the different communities of ICT and SSH researchers, as well as of policy makers, citizens, etc. In Deliverable D2.2, which presented the idea concept of the FM, a set of target groups was identified (Dedicated RRI support structures, SSH researchers, ICT developers, Policy makers, Users and the General public). This set was re-organised in this deliverable which presents the Initial framework model; the target groups therefore consist of Policy makers, Research, Education, Business & Industry, Civil Society. The different target groups have different views about what responsibility and sustainability are, in terms of social, technological and economic perspectives. Some key points from D2.2, confirmed also by the experiences of the Expert workshop are the following:

- The need to provide and use a set of resources to: Establish mediators from the SSH field to be involved in ICT R&I projects. This could be an idea for a new resource/service, based on the merging of the project mapping work and the guidelines for the implementation of RRI+SSH in ICT
- Each resource must result from the joint perspectives and efforts of both ICT and SSH stakeholders, and – where needed – of citizens
- It is necessary to create a vision for what target groups (coming either from ICT or SSH disciplines or multi-disciplines involving ICT and SSH) should look like in a time frame of 5-10 years
- Each user should be supported in the selection of the right resource(s) to deploy or consult, ensuring he/she will experience an easy and smooth service when using the online collaborative Platform

“The Framework Model, through the deployment of all its resources, is expected to create an online shared knowledge marketplace for bringing together ICT developers, SSH researchers and other stakeholders across H2020 ICT-related projects and activate constructive and co-creative interactions between the ICT and SSH disciplines for delivering responsible and inclusive innovations)” (D2.2 - Idea concept of the European Framework Model for responsible ICT innovation).

Three different levels of interaction are envisaged for the different resources of the FM:

- One-way interaction, such as the definitions of guidelines or recommendations. These kinds of resources will be “static”, and their descriptions will be updated during the project. Based on the typology of content, besides the HTML format, the possibility to download the resource in PDF format will be included.

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- Two-way interaction, i.e. the possibility for the user to upload, or suggest modifications to the information can be included in different resources. Search options based on associated key words/ tags and filters to refine the content and speed up the search process belonging to this category.
- Multiple stakeholder interaction, whereby users can "discuss" and exchange information with each other. The format will be based on today's state-of-the-art social networks with information such as: user profile, photo, friends list, account security settings, account privacy settings, sharing options, internal private messages, news feed, etc.

The ten resources introduced in the Idea Concept of the FM were:

- The concept of Responsible Research and Innovation informed by SSH in ICT
- Matrix of the key challenges
- Ecosystem mapping
- Best Practice Repository of responsible ICT research and innovation with SSH input
- Guidelines for Responsible ICT Research and Innovation informed by Social Science SSH
- Tool for assessment of RRI and SSH perspectives in ICT within an organisation
- Fact Sheets and Policy Briefs
- Policy Recommendations
- Key measurable success indicators
- Virtual Matching Catalogue

These ten resources used in Deliverable D2.2 were also discussed during the expert workshop in March 2018 (See Annex 1).

After the expert workshop these resources were reduced to nine as "Fact Sheets and Policy Briefs" and "Policy Recommendations" were unified into one resource. Therefore, the set of resources described in this Deliverable are:

- The HubIT concept
- List of the key challenges
- Ecosystem mapping
- Good Practice Repository of responsible ICT research and innovation with SSH input
- HubIT Guidelines
- Assessment tool
- Fact Sheets, Policy Briefs and Policy Recommendations
- Key success indicators
- Social Dashboard

3.2. THE EXPERT WORKSHOP IN ROME IN MARCH 2018

The scope of the workshop

This event aimed at validating the initial Framework Model Idea (D2.2) by a number of external experts from various disciplines. They were asked to reflect upon the potential utility, limits and boundaries of the definition of the tools included in the FM proposed in Deliverable D2.2.

Expected outputs of the workshop

The workshop was expected to produce a general feedback about:

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- The utility and the intended impact of the FM
- The actual interest of people and organisations in using the resources of the FM
- The potential problems in using these resources
- The potential practical use of each of the FM resource
- The potential improvements of the resources

The participants

56 participants attended the two days' workshop (1 invited speaker, 25 HubIT project members and 30 external experts from ICT, SSH, policy makers/PA, Citizens associations). Participants were informed in advance about the RRI and the FM idea. All the experts received: documentation about the 10 resources of the FM (an extract from the D2.2), documentation about the RRI and information about the methods used during the workshop.

Methodology

The workshop was organised over two days, on 21-22 March 2018. On the first day the participants were welcomed and three speeches were given on:

- The Role of RRI in the governance of the City of Rome
- Introduction, HubIT project objectives, team and Expert Workshop overview
- Introduction to workshop methodology and discussion subjects

The discussion about the FM resources (and the validation) was organised in seven working tables. The composition of each working table was established in advance as follows:

Table 1: Composition of the working tables during the expert workshop

Mapping	
N° of working tables	**7**
N° persons for each table	**8**
Of which consortium members	3
Moderator	*1*
Note takers	*2*
Of which experts	5
ICT	*2*
SSH	*2*
Other	*1*
N° of items (FM resources) discussed by each table	**10**
Duration (min) of discussion for each resource	**45**
Group presentation duration (min)	**5**

The **moderator** (one for each working table) asked specific questions (triggering questions, below) during each "FM resources" round for the expert participants to discuss.

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Two **note keepers** were allocated to each working table:

- The first note keeper captured the "raw" answers on a paper (posters); these answers were used as the basis for collective discussion among experts; this discussion was led by the moderator. During the discussion effort was made to classify the experts' input and recommendation.
- The second note-keeper took detailed notes and digitalised information as a contribution to the workshop minutes and D2.3.

The **experts** participated in the discussion providing their opinions and answers to the triggering questions.

Once each expert group in each working table reached a consensus, the first note keeper wrote on a Table poster the main outcomes of the discussion related to each single trigger question.

A short oral presentation of the results of the session was given by one expert (selected by the team) from each working table. This presentation was made on the basis of the poster filled in during the working table session.

Finally, experts were invited to give their opinions on the FM idea and its resources during an "interactive posters session", writing their opinions on two big posters which were put up on the room walls where the workshop was held. Experts placed coloured dots on these posters; colours were related to the category that each expert belongs to (i.e.: ICT=red; SSH=blue; Policy Maker=green; etc.).

Workshop implementation

The Expert Workshop in Rome (21-22 March 2018) focused on the validation of the initial Framework Model's Concept Idea by 30 external experts from various disciplines (Note that the discussion was done therefore on the ten resources, i.e. tools introduced in the Deliverable D2.2). This means that the name of each resource discussed during the workshop was the name adopted in the Deliverable D2.2. The workshop was supported by a team of 22 members of the consortium who shared their knowledge and experience by providing high-quality feedback to each resource and to the possible extension of the Framework Model itself.

The composition of the expert group was the following (primary category): 16 SSH researcher, 12 ICT R&D, 2 Civil Associations. Their background in relation to the RRI dimensions can be summarised as follows (main expertise): 10 Science Education, 7 Open Access, 7 Ethics, 4 Public Engagement, 2 Gender Equality. All the experts brought also knowledge in RRI domains other than the primary ones, paving the way fora heterogeneous and balanced collective discussion.

The experts were asked to reflect upon the limits and the boundaries of the current definition of the resources included in the FM and propose any adjustments or improvements.

A total of 192 raw answers were collected from the participants in different tables on the basis of the posters filled in, as explained before, and the digital notes taken during the expert workshop. These answers sometimes can be in contrast each other, as they collect ideas and opinions from different people. Some of these answers presented similarities and, for this reason, they were aggregated in clusters for a further rationalisation into around 40 feedbacks about the utility and the intended impact of the Framework Model. Due to the degree of maturity of the FM, overall almost half of the feedback about the definition and the scopes of the resources were very positive (47%), or acceptable (38%), and only a minor component (14%) was negatively received.

In addition, the experts provided a general scoring of interest about each of the single resources, listing the "Best Practice Repository of responsible ICT research and innovation with SSH input" and the "Ecosystem mapping" as more relevant.

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Finally, some raw suggestions provided a preliminary input to the potential enlargement of the scope of the Framework Model. The most interesting ones were:

- The FM shall be used to give value or "weight" to the entire chain of ICT-SSH, stimulating an equal and interdisciplinary collaborative process.
- The FM shall be used to design roadmaps to include RRI in the research process, i.e. as "turnkey" solutions for ICT researchers.

Summary of the expert workshop reporting

This section synthetically explains the results of the expert workshop. A detailed report of the workshop and the outcomes produced are presented in ANNEX 1. Experts engaged in the workshop of March 2018 discussed the ten resources identified in Deliverable D2.2 answering the following three questions:

- Question 1: Is it perceived as useful by users? Explain why
- Question 2: Potential problems/limitations in use
- Question 3: How to use/How to improve/Suggested content and functionalities?

The details of the outcomes of the workshop are presented in ANNEX1 and the results from the seven working tables are presented as extracted by the reports of each group (working table).

The suggestions related to the three questions have been considered and classified in the following way:

Question 1: Is it perceived as useful by users? Explain why

In our analysis the suggestions have been classified according to the experts' answers in considering the degree of usefulness expressed by the following scale:

- **YES**: Unconditional YES
- **YES, BUT**: The resource is useful but some modifications are necessary. The experts suggest the necessary modifications
- **NO, BUT**: The resource does not appear really useful but with relevant modifications could be maintained
- **NO**: Unconditional NO

Question 2: Potential problems/limitations in use

When analysing the suggestions, we considered the kind of factors (internal or external to the project) that limit the use of the resource according to the following scale:

- **Very low**: the limitation factors are internal to the project and easy to implement
- **Low**: the limitation factors are internal to the project and request an effort to implement
- **Medium**: the limitation factors are external to the project but the project has resources for partially overcoming the limitations
- **High**: the limitation factors are external to the project but the project does not have resources for overcoming the limitations. Removing of limitations is very complex.

Question 3: How to use/How to improve/Suggested content and functionalities

In our analysis the use, improvements, content and functionalities suggested have been classified considering the (estimated) effort for the implementation and the expected impact level according to the following scale:

- **Very low**: the (estimated) effort does not have an impact on the project

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- **Low**: the (estimated) effort should not have an impact on the project
- **Medium**: the (estimated) effort could have an impact on the project
- **High**: the (estimated) effort has an impact on the project

Figure 1: The HubITexpert workshop (March 2018, Rome)

For providing an overall vision resulting from the answers to the three questions, in ANNEX 1, at the end of each resource, a table linking the outcomes of the three questions is provided. One table for each Resource provides a correspondence Needs – Actions; it consists of three columns. In particular:

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- The first column represents the clusters of needs (how to overcome the limitation of the usefulness and the practical use). The clusters were obtained considering the answers to the first and second questions, by putting together similar needs
- The second column represents the instances of the needs as suggested by the experts (first and second questions). As you see, sometimes some needs or actions, which are the expression of the opinion of one among the participants, can contradict each other
- The third column represents the instances of improvements/actions as suggested by the experts (third question). Each improvement is associated with the most pertinent cluster of needs

Table 2: Correspondence Need-action scheme: an example referred to Matrix of the key challenges

CLUSTER	NEEDS	ACTIONS
A - It is necessary to introduce a better cooperation among ICT and SSH communities	- "Challenges in society to be solved by cooperation between ICT/SSH" - The source of the key challenges should be SSH and ICT - The need should come from SSH --> know their expectations - Understanding of each area - not working in silos / source should be mixed - Yes, it is useful when there is an interaction with other entities - Mind-set of ICT experts do not guarantee the success of the process	- Invite people to discuss their own problems, what are the challenges (Better thousand flowers than one) - Users: for people making/designing calls - They (the calls) should not be ICT challenges. They should be "human" challenges, human/technology interactions. ICT is a tool, an enabler - USER FOCUS: to target higher level call designers. Connect with risk-management as part of research/projects - Map interdisciplinary methods to be used to solve key challenges - Need to add explanation for SSH involvement (scope). It is not always obvious - Upload users' experiences

Production of the initial European Framework Model

For refining the Idea Concept produced in Deliverable D2.2 and specifying the Initial European Framework Model nine working groups led by DBT (2 working groups), CNR (2 working groups), Pedal, TAU (2 working groups), LCU and LOBA analysed the outcomes of the workshop with experts and provided inputs for the Initial Framework Model.

The composition of the working groups is illustrated in the following table:

Table 3: Composition and coordination of the Working tables during the expert workshop

Composition of the working groups
Working groups coordinated by DBT:
- The concept of Responsible Research and Innovation informed by SSH in ICT (Members: LCU, CNR)
- Guidelines for Responsible ICT Research and Innovation informed by Social Science SSH (Members: DBT, Nexus)
Working groups coordinated by CNR:
- Matrix of the key challenges (Members: CE, TUB, TAU, SD, EFPC, Pedal, Nexus)
- Best Practice Repository of responsible ICT research and innovation with SSH input (Members: CNR, CVTI, SD, EFPC, Pedal, LOBA, Nexus)

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Working group coordinated by Pedal:
- Ecosystem mapping (Members: Pedal, CVTI, IVSZ, SD, LOBA)
Working groups coordinated by TAU:
- Tool for assessment of RRI and SSH perspectives in ICT within an organisation (Members: TAU, LCU, UT, Nexus)
- Key measurable success indicators (Members: TAU, Nexus)
Working group coordinated by LCU:
- Fact Sheets, Policy Briefs, Policy Recommendations (Members: LCU, UT, DBT, EFPC, LOBA)
Working group coordinated by LOBA:
- Virtual matching catalogue (Members: LOBA, CVTI, SD, EFPC, Pedal, CNR, Nexus)

Each working group:

- Analysed the outcomes of the Expert Workshop
- Suggested modification for the resources contained in Deliverable D2.2
- Suggested requirements for the Platform (with LOBA)
- Identified impacts on the other project activities (Deliverables, participatory events, ...)
- Prepared specific contribution to Deliverable D2.3 on the Initial Framework Model

The final results are presented in following section 4.

4. THE INITIAL EUROPEAN FRAMEWORK MODEL

4.1 THE DESCRIPTION OF THE RESOURCES AND THEIR SCOPE WITHIN THE FRAMEWORK MODEL

The building blocks of the HubIT European Framework Model were defined in the Idea FM presented in the "D2.2 - Idea concept of the European Framework Model for responsible ICT innovation" as a list of ten resources. ANNEX 1 "Summary of suggestions from the Expert workshop of March 2018" describes the main outcomes from the Experts Workshop held in Rome in March 2018. As already explained in the previous section, based on the outcomes of the Expert workshop, the Initial European FM was reduced from ten resources to nine resources (In the Initial European FM, Fact Sheets, Policy Briefs and Policy Recommendations were unified with respect to the Idea concept). The following table lists the FM resource titles in the idea FM and the Initial European FM. The Matrix of Key challenges after much deliberation is changed to a List of Key Challenges; a matrix was considered too complex.

Table 4: Resources in the idea FM and in the Initial FM

Resources in the idea FM	Resources in the Initial European FM
The concept of Responsible Research and Innovation informed by SSH in ICT	HubIT concept
Matrix of Key Challenges	List of Key Challenges
Ecosystem Mapping	Ecosystem Mapping

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Virtual Matching Catalogue	Social Dashboard
Best Practice Repository of responsible ICT research and innovation with SSH input	Good Practice Repository of responsible ICT research and innovation with SSH input
Guidelines for Responsible ICT Research and Innovation informed by Social Science SSH	HubIT Guidelines
Tool for assessment of RRI and SSH perspectives in ICT within an organisation	Assessment Tool
Policy Recommendations	*The resource is merged with Fact Sheets and Policy Briefs*
Fact Sheets and Policy Briefs	Fact Sheets, Policy Briefs and Policy Recommendations
Key measurable success indicators	Key Success Indicators

Moreover, the common scheme defined for each resource already defined in Deliverable D2.2 has been refined according to the following table.

Table 5: Scheme used for describing the resources of the FM

Item	Expected content
Category	Categories allow grouping the same or similar resources. In particular, the following set of categories was identified: • **advice** (a set of recommendations and procedures to apply policies or RRI methodologies)**,** • **definition** (a static information "as-it-is", a statement) • **tool** (a practical, interactive feature enabling the user to manage content and resources)
Description	An "at-a-glance" definition of the intended resource including, where necessary, short samples of the content.
Implementation and kind of interaction with users	Explanation about the **users' interaction with the resource** (One-way, Two-way, Multiple stakeholders' interaction)
Scope	The reason for the resource, i.e. why HubIT is developing and validating this specific support for users.
Target	The main user target(s): she or he could be representative of one or more of the following categories: Policy makers, Research, Education, Business & Industry, Civil Society
Expected impact	How the resource is expected to practically impact the users' day-to-day activities.

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Item	Expected content
Content	The content describes the resource and the elements which the resource consists of.
Sources	Where information to produce the content comes from
Output/Format	The type of file used to provide the resource.
Direct link to other resources	This is the link to other resources that have content logically inter-linked with the current one.

The following sections describe the nine resources of the Initial FM, considering the outcomes from the expert workshop held in Rome in March 2018.

4.2 THE HUBIT CONCEPT

Name of the resource HubIT concept

Category Definition

Description

*The "**HubIT concept**" is an interdisciplinary approach, which aims at aligning both the process and outcomes of ICT research and innovation with the values, needs and expectations of society. ICT researchers and innovators, SSH researchers and societal actors become mutually responsible to each other, towards achieving societally desirable, acceptable and sustainable goals.*

The core requirement is the engagement of stakeholders and potential users throughout the research and development stages, especially in the early stages, incorporating their needs in design and methodology. The RRI is expected to work on several levels: societal benefit goals setting (regarding the general human environment), procedures such as involvement of multi-stakeholders or ethics check (on the organisations), creation of a common vocabulary and mind-set change (on the single personal level).

It is a co-responsibility of ICT and SSH to make ICT research and innovation responsible. ICT and SSH should be equal partners in RRI discussions. The approach helps define the unintended social and economic impact (and all possible indirect impacts). It may generate, thus aligning both the process and outcomes of R&I, with the values, needs and expectations of citizens and society at large.

Implementation and kind of interaction with users

The concept will consist of two components:

1) A "at a glance" definition of the concept which is easily understandable to everyone and that will only take up of a few sentences of space. This component is for the visitors who just want a short and simple introduction to the concept and understand the basics.
2) A longer version where the concept is elaborated and contextualized in further detail. This is for the visitors who are interested in exploring the concept and its building blocks. It will include links to other external resources where the building blocks can be studied in further detail.

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The implementation of this resource in the Platform

The concept is the heart of the HubIT Metropolis. It is the starting point of everything which is presented on the Platform. Therefore, it will be communicated in a way so that everyone will be able to understand it. Furthermore, it should also sell the HubIT Metropolis; it means informing – or convincing – users in a "captivating" way about the added value of putting RRI into practice through ICT and SSH collaborations. If the concept is able to do this then chances are that the other resources of the Platform will also be used by the visitors. In other words, the concept is the resource which ties the whole framework together and sells it.

The concept is the first thing that captures the users' attention when they visit the Platform. It is thus the starting point of the visitors' exploration of the Platform. Indeed, at level of the Platform, the concept is accessible in the homepage. It is quite static – mostly text, a few illustrations and then hyperlinks to other resources (external as well as internal). Also, some appealing illustrations to engage people are presented. Visitors are invited to comment on the concept and provide suggestions for how to improve it. Feedback can be submitted via a Google form directly on the Platform.

The HubIT concept is showcased on the Platform using the metaphor of a square; in particular, it is represented by the "Concept square".

Scope

The scope of this resource is to end up with an understanding of an interdisciplinary approach to responsible ICT research and innovation and its added value which is equally shared by both ICT and SSH communities. In the next two years we will keep the concept up-to-date and refine it based on the input we receive from our target groups

Target

All the stakeholders are the target for this resource.

Expected impact

The aim is to end up with a concept which is equally shared by representatives of ICT and SSH; i.e. a mutual understanding of the approach across the two communities. If we achieve this aim chances are that we will see more interdisciplinary projects that will lead to more responsible processes and outcomes of ICT research and innovation.

Interactions with other project activities

Compared to other HubIT resources, the HubIT concept is not dependent on inputs from other project activities. It can mainly be updated with input from a literature review. However, its usability and content will be tested by users who take part in the HubIT activities.

The next Framework Programme plays a major role in the further development of the concept. E.g. will the role of ICT and SSH collaboration be framed differently in the future EU Horizon programme? Thus, the HubIT project team will stay updated, so the concept can be updated accordingly and continuously and thus not to be outdated before the project is over.

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Content

The concept

RRI can be considered as a stakeholders' strategy to share responsibilities related to research and innovation they are involved in. This implies the introduction of broader foresight and impact assessment for new technologies, beyond their anticipatory market benefits and risks. The concept expresses the relationship between science and society as "Science with and for society".

A further elaboration of this concept refers to RRI as the *ways of proceeding in research and innovation that allow those who initiate and are involved in the processes of research and innovation to obtain*:

- relevant knowledge on the consequences of the outcomes of their actions and on the range of options open to them
- an effective evaluation of both outcomes and options in terms of moral values
- a design of the research and innovation process, shaped in a way that allows for the consideration of ethical aspects and societal needs

So, RRI takes into account the effects and the potential impacts on the environment and society and implies equal participation. It aims to support the development of technological innovations which are in line with societal expectations and needs, along the six dimensions of the RRI (i.e. gender equality, ethics, science education, governance, public engagement, open access).

Starting from this brief description, we can address the following points with respect to the HubIT concept:

- RRI takes into account the effects and the potential impacts on the environment and society
- ICT targets accountability. It is often concerned with compliance of requirements rather than thinking about larger societal goals
- We need to include those elements of responsible design and respect outlined in this document into methodologies and agendas advocated by SSH

The "responsibility" in ICT research and innovation has to consider a number of elements to be inclusive and aimed at reversing inequalities, among which the most important to start any dialogue and knowledge sharing process, is the adoption of a common language and a common culture (within a discipline, between disciplines, with stakeholder groups etc.), coupled with the flexibility of ICT actors in being open to different perspectives.

Sources

In order to achieve the expected impact of this resource the further development of the HubIT concept is highly dependent on input from project activities where both representatives from ICT and SSH communities participate.

Besides input from our target groups the concept will be supported by the main documents of the European Commission regarding RRI and ICT/SSH collaboration. In the further development of the concept, the next European Framework Programme will play a major role. In this context there are still many questions to be answered. E.g.: Will ICT and SSH collaboration be included as a strategic approach of Horizon Europe? What will be the role of RRI? Thus, the working group will stay updated, so the concept can be updated accordingly and continuously and thus not be outdated before the project is over.

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Output/Format

- HTML
- PDF

Direct link to other resources

This highly depends on the final content of the concept – and of the other HubIT resources too – but the idea is to link to other resources whenever it is relevant. As already mentioned above we will also link to external resources which elaborate the building blocks of the concept in more detail and contextualize it.

4.3 LIST OF KEY CHALLENGES

Name of the resource List of Key Challenges

Category Tool

Description

A challenge is something new and difficult to address, which requires a great effort and strong determination and identifies cross-cutting issues that combine societal relevance with ICT fields of research and innovation.

The "List of Key Challenges" in HubIT provides a catalogue of key challenges relevant both in ICT and SSH. Each of these Key Challenges will be expanded and emphasize shared concerns among stakeholders.

Examples of Key Challenges are:

- How to ensure data privacy when developing new ICT solutions
- Improving patient acceptance of ICT in Ambient Assisted Living
- How Artificial intelligence can change human behaviour and social interactions

Implementation and kind of interaction with users

Table 6: Structure of the List of Key Challenges resource

List of Key Challenges	List of elements, and each element has the following structure
Title of the Key Challenge	
Challenge owner	Name of the Key Challenge owner
	Family name of the Key Challenge owner
	E-mail address of the Key Challenge owner
Key Challenge description and cross-cutting issues	
SSH disciplines that characterize the Key Challenge	SSH disciplines*
ICT macro areas that characterize the Key Challenge	ICT macro-areas*
The Call topics in the EC H2020 funding programme connected to the Key Challenge	Call topics in the EC H2020 funding programme*
Stakeholder type interested in the Key Challenge	List of stakeholders' type*
Countries where the Key Challenge has been applied	List of Countries*

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RRI dimension involved in the Key Challenge	List of RRI dimensions*

This is expected to be a two-way interaction resource as users can find but also propose a new challenge. A challenge can consist of a descriptive text, with some graphics and include links to existing partners / good practices / documentation related to different listed issues and challenges. This resource supports users to access and evaluate to which extent RRI methods are required for their needs. The list is also used by the HubIT consortium, when defining supporting activities such as for example, workshops and events involving stakeholders.

When defining a Key Challenge, it is necessary to specify information according to the following structure:

The symbol * indicates a set of values specified in the tables below. Note that these tables are also used in other resources.

Table 7: Set of SSH disciplines

SSH disciplines*
Arts
History
Languages and literature
Philosophy
Theology
Anthropology
Economics
Human geography
Law
Political science
Psychology
Sociology
Other

Table 8: Set of ICT macro-areas

ICT macro-areas*
New generation of components and systems
Advanced Computing
Future Internet
Content technologies and information management
Robotics
Micro- and nano-electronic technologies, Photonics
Other

Table 9: Set of the Call topics

Call topics in the EC H2020 funding programme*
Future and Emerging Technologies (FET)
Research infrastructures
Leadership in Enabling technologies (LEIT)- Information and Communication Technologies

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Leadership in Enabling technologies (LEIT)- Nanotechnologies, advanced materials, biotechnology and production
SCs: Horizon 2020 Work Programme in the area of Health, Demographic Change and Wellbeing
SCs: Horizon 2020 Work Programme in the area of Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research and the Bioeconomy
SCs: Horizon 2020 Work Programme in the area of Secure, Clean and Efficient Energy
SCs: Horizon 2020 Work Programme in the area of Smart, Green and Integrated Transport
SCs: Horizon 2020 Work Programme in the area of Climate action, Environment, Resource Efficiency and Raw Materials
SCs: Horizon 2020 Work Programme in the area of Europe in a changing world - Inclusive, innovative and reflective societies
SCs: Horizon 2020 Work Programme in the area of Secure societies – Protecting freedom and security of Europe and its citizens
Cross-cutting Horizon 2020 Work Programme (Focus Areas)
Science with and for Society (SwafS)- Horizon 2020 Work Programme
Innovation in SMEs

Table 10: RRI dimensions

List of RRI dimensions*
Ethics
Gender equality
Governance
Open access
Public engagement
Science education

Table 11: Stakeholders type

List of stakeholders' type*
Policy makers
Research
Education
Business & Industry
Civil Society

Note that the stakeholders types identify the type of organization, and people involved in this organizations can be for example researchers in ICT or SSH, educators in ICT or SSH, etc..

The implementation of this resource on the Platform

Information from this resource will be accessed with a full text searching in the structured information related to each key challenge.

Each user can select a key challenge from the pre-existing list. The list of the key challenges is a dynamic list that each user can update.

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Under the metaphor “Make valuable connections at our Social Airport!” the Platform allows user filtering by ICT or by SSH, the call topic, the stakeholder type; the country; the RRI dimension, for finding key challenges. Each user can add new key challenges.

Scope

The scope is to define and use Key Challenges that will be emphasised in HubIT stakeholder network activities. This will include cross-cutting issues that combine societal relevance with ICT fields of research and innovation. This resource should be problem oriented and its focus is on shared emerging challenges and issues.

Target

- Policy makers
- Research
- Education
- Business & Industry
- Civil Society

Expected impact

Support identifying, collecting and sharing emerging Key Challenges with the stakeholders’ network, in the Framework Model.

This will allow sharing of key ICT challenges and cross-cutting issues of social relevance. These Key Challenges can be dynamically updated.

Content

The List of Key Challenges provides a problem-oriented view, focusing on shared challenges and issues:

- The Key Challenges specify the focus of the HubIT stakeholder network activities
- Cross-cutting issues related to each Key Challenge that combine societal relevance with ICT fields of research and innovation

Content is specified by experts and users and it is updated based on the users’ inputs. Each user can suggest a new Key Challenge. The suggested challenges are periodically updated and classified in HubIT.

Sources

- Users of the FM
- Experts’ meetings
- Advisory Board workshops

Output/Format

- Dynamic HTML

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- PDF

Direct link to other resources

- The HubIT Guidelines
- Assessment Tool
- Good Practice Repository of responsible ICT research and innovation with SSH input.

4.4 ECOSYSTEM MAPPING

Name of the resource Ecosystem Mapping

Category Tool

Description

This resource is a systemized mapping, including an all-encompassing list of clustered activities, organisations, experts, results and initiatives (as for example projects) in the wide perspective of co-responsibility of SSH and ICT experts. This mapping gives a global vision of the thematic distributions and competences related to EC-funded initiatives. It can contain other relevant national and international initiatives and RRI-related organisations.

Implementation and kind of interaction with users

This resource will be published for consultation and for manual update by potential stakeholders (projects, organisations) interested in joining the HubIT activities. The data, collected through an online questionnaire, will be visualised in a 1-page form.

The displayed data will comprise key information on the actor/activity fostering networking in the community. The Ecosystem Mapping information has the structure described in the following table.

Table 12: Structure of the Ecosystem Mapping

Ecosystem Mapping (The symbol * indicates a set of values specified in the tables of section 4.3)		
First level descriptors	**Second level descriptors**	**Values**
Projects and initiatives		
	Project/initiatives acronym	
	Project/initiatives full title	
	Keywords of the Project	
	Project Website	
	Project Coordinator	
	Funding programme	
	RRI Dimensions of the project	

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	ICT Macro areas of the project	ICT macro-areas*
	Call topics (H2020)	Call topics in the EC H2020 funding programme*
	Other programmes	Specify…
	Details on the initiatives (Publication / Event/ Support or policy measure) or projects	
	Notes on projects or initiatives	
Stakeholders		
	Stakeholder Name	
	Stakeholder Family Name	
	E-mail address	
	Other contact details (if available)	
	Type of Stakeholders	List of stakeholders' type*
	Department / Position in the organisation	
	Organization name	
	Organization acronym	
	Organization type	
	Email 1 of the organization	
	Email 2 of the organization	
	Address of the organization	
	City of the organization	
	Country of the organization	List of Countries*
	Main expertise of the organisation (SSH or ICT)	
	Main mission of the organisation	
	SSH discipline organisation expertise	SSH disciplines*
	Title of Relevant Projects or Initiatives	
	Relevance of Stakeholders, Projects or Initiatives for HubIT	
	Call topics	
	Notes on stakeholders	
	RRI dimensions of interest	

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SSH disciplines for the project/initiative		SSH disciplines*
ICT macro areas (from LEIT programme)for the project/initiative		ICT macro-areas*

The implementation of this resource in the Platform

In accordance with the comments from the HubIT consortium and the expert workshops, the "Ecosystem mapping" has to be highly visible on the webpage. The resource has browsing and searching functionalities that operate on two macro categories:

- Projects/Initiatives
- Stakeholders (people/organizations)

Both the browsing and searching functionalities should facilitate access to the database where they could apply various filters (RRI dimension, SSH dimension, country, project, etc.), in order to find information on projects and stakeholders they are looking for in a structured and intuitive way.

"Ecosystem mapping" is quite self-explanatory but aiming to clarify this concept for people not internal to the HubIT project, it is presented in the Platform under the metaphor of "Make valuable connections at our Social Airport! Engage and network with other peers and stakeholders. Schedule meetings and share interesting contents with others".

Scope

The mapping helps the HubIT target groups to understand who is doing what and, how activities relate to each other.

Target

All the stakeholders.

Expected impact

This resource facilitates users to identify and correlate actors, results and activities. Furthermore, this resource can support the aggregation and capacity building along common factors contained in the mapped knowledge and "RRI+SSH in ICT" perspectives determined during the stakeholder events held within the project, and by users of this resource.

Content

Data are collected through an online form.

Sources

- Existing databases
- Running initiatives
- Self-inclusion of interested actors

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Output/Format

- Dynamic HTML + Database + PDF
- It will be possible to export the stakeholders or project info as PDF

Direct link to other resources

- Good Practice Repository of responsible ICT research and innovation with SSH input
- Social Dashboard

4.5 GOOD PRACTICE REPOSITORY OF RESPONSIBLE ICT RESEARCH AND INNOVATION WITH SSH INPUT

Name of the resource Good Practices Repository of responsible ICT research and innovation with SSH input.

Category Tool

Description

Starting from the definition of Best Practices given in "D2.2 – Idea concept of the European Framework Model for responsible ICT innovation" and on the basis of suggestions coming from the consortium and the workshop with stakeholders, the proposal for the FM has been evolved providing stakeholders with very easy and understandable necessary information to adapt and adopt Good Practices. In particular, based on suggestions from the stakeholders' workshop it was decided to change the term "Best Practice" to Good Practice (GP).

The Good Practices Repository is a collection of clustered documentation about the successful implementation of RRI principles into the ICT processes. In particular, Good Practices are defined considering the six RRI dimensions, the SSH topic, the geographical context and the target user groups (I.e., researchers in ICT and SSH, educators in ICT and SSH, policy makers ...).

A Good Practice is any initiative and procedure (e.g. projects, studies, policies, use cases, success stories, fact sheet, methodologies, on-field activities) to implement it, which the experience has shown to work well, producing optimal results in the implementation of ICT research and innovation by a co-responsibility of SSH and ICT researchers, following one or more principles expressed by the six RRI criteria (Ethics, Public Engagement, Gender Equality, Science Education, Open Access, Governance). A Good Practice is characterised by replicability. This means that a Good Practice should be adaptable to similar objectives in different geographic areas for different potential target groups.

Four examples of Good practices are described and available at:

https://drive.google.com/drive/folders/1T0C-MsD93nntlcB9u4eryYdILxSDzECq?usp=sharing

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Implementation and kind of interaction with users

The Good Practices Repository is a two-way interaction tool, because practices can be used and uploaded both, by consortium members and by stakeholders outside the consortium. On the one hand, the GPs repository provides examples of what stakeholders from different sectors have done, on the other hand suggests how the resources of the "tools for assessment" can be used in different contexts.

A template has been defined for organising, collecting and finding information related to Good Practices (GPs). The template facilitates identification and writing the contents of a GP. The first and the second columns contain descriptors of information; the third column contains the established set of values (if they are not free).

Table 13: Structure of Good practice

Good Practices (The symbol * indicates a set of values specified in the tables of section 4.3)		
First level descriptors	**Second level descriptors**	**Values**
Title of the Good Practice		
Description of the Good Practice		
Keywords of the Good Practice		
Type of Output of Good Practice		
		Event
		Project
		Training / Learning
		Policy definition
		Guidelines
		Other
Name of the owner/responsible organization of the Good Practice		
Type of the owner/responsible organization of the Good Practice		List of stakeholders' type*
Contact person of the owner/responsible organization of the Good Practice		
	Name of the contact person	
	Family Name of the contact person	
	E-mail of the contact person	
	Phone of the contact person	
	Website of the contact person	
	Address of the contact person	

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Link to the Good Practice		
Other links to the Good Practice (Useful Videos, Documents, …)		
Level of Access to the Good Practice		
		Public (Open source)
		Private
		The fee-payers (if any)
		The developers (if any)
		Other
Authors of Good Practice (Please repeat for the number of authors for each Good Practice*)		
	Author Name	
	Author Family Name	
	Author E-mail	
Date of publication of the Good Practice		
Status of the Good Practice		
		Running
		Ended
Type of objective of the Good Practice		
		Organisation of events open to civic society
		Training or sharing information about one or more RRI pillars
		Training or sharing information about the integration of SSH advice into ICTs
		Design of new SSH-inclusive ICTs
		Define / outline policies for integration of SSH advice into ICTs
		Establishment of a Community of interest
		Other
Description of the objectives of Good Practice (Please, describe: the		

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use, the SSH role in the GP implementation)		
Use and usefulness of Good Practice		
Users' target group (stakeholder type)		List of stakeholders' type*
Location (Please specify countries where the GP was applied)		(List of counties*)
RRI dimensions involved in the Good Practice		List of RRI dimensions*
SSH disciplines involved		SSH disciplines*
ICT macro categories (from LEIT programme)		ICT macro-areas*
		Other
Description of ICT used/produced (within the GP)		
Stage of the process development / use of the ICT product		
		Design
		Implementation
		Validation
Stage in which the RRI principles have been taken into account in the process development / use of the ICT product		
		Design
		Implementation
		Validation
Type of actions done to include the RRI principles into the ICT research and innovation processes		
		Adapt the (digital) content
		Balance the team (gender, background)
		Share knowledge
		Re-define the design
		Train on the best use of the solution

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		Consider the ethical impact
		Evaluate the requests of society
		Other
Method used to exchange information and knowledge to include the RRI principles into the ICT research and innovation processes		
		Cooperative workshops
		Focus groups
		Round tables
		External revision of SSH experts
		Face-to-face meetings
		1-way communication (from SSH to ICT)
		Other
Link to the description of the method		
Participation type of people and organizations in the GP implementation		
		They all participate into a funded project/initiative
		Fee-token for participation
		Voluntary basis
		Through sectoral associations
		Other
How people and organisations were engaged		
		As activity of their work
		Through sectoral associations
		Fee payment
		Other
Impacts assessment indicators		
	Number of people participating	
	Number of organizations participating	

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	Number of events held	
	Number of researchers (ICT+SSH) involved	
	Number of women involved	
	Number of joint discussion themes	
	Number of RRI-inclusive activities	
	Number of organisations that benefit of the GP impacts	
		<1
		>=1, <5
		>=5, <10
		>=10
	Number of people that benefit of the GP impacts	
		>=1, <10
		>=10, <50
		>=50
Geographical scale of impacts		
		Local (Municipality)
		Regional
		National
		International
Expected timeframe for achieving this impact		
Number of organisations to engage to finalise the GP (at time)		
		>=1, <5
		>=5, <10
		>=10
Number of people to engage to finalise the GP (at time)		
		>=1, <10
		>=10, <50
		<=50
Who sustained the cost / effort		
		Only the owner

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		Shared among participants
		Shared with target stakeholders
		Other
Type of the revenue model adopted		
		Public funding
		Private Co-funding (mixed private-public)
		Only Private
		Crowdsourcing
		Participant fees
		Other
Description of the revenue model		
Notes		

The implementation of this resource in the Platform

- Under the metaphor "Policy District" the Platform allows users to access Good Practices, filtering by ICT or by SSH, the call topic, the stakeholder type; the country; the RRI dimension, the geographical scale, the assessment indicators or the implementation scale. Each user can add new Good Practices; a quality assurance process will be established in the HubIT consortium.

Scope

The repository is a collection of clustered documentation about the successful implementation of RRI principles into the ICT processes. There are two main reasons to share a Good Practice with interested stakeholders:

- A GP suggest a new way to plan activities and achieve targets
- A GP can be re-used, by scaling it accordingly to the stakeholders'/users' needs

Target

- Policy makers
- Research
- Education
- Business & Industry
- Civil Society

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Expected impact

The expected impact consists of improving the knowledge of how to facilitate collaboration and co-responsibility between SSH and ICT areas, facilitating the diffusion of such Good Practices and embedding RRI principles across ICT.

Other impacts are related to assessing and enlarging the knowledge base of the EU, and increasing awareness of the benefit of collaboration among different stakeholders, reducing the personal-benefit vision of market-oriented organisations.

Content

Examples of Good Practices come from:

- Projects
- Studies
- Policies
- Methodologies
- Use cases
- Success stories
- Fact sheets
- Methodologies
- In-field activities
- Other initiative, specify....

Sources

- Existing databases
- Identified running initiatives in the EU, and beyond
- Results of previous funded initiatives in the EU and beyond
- Identified running initiatives in each country
- Results of previous funded initiatives in each country
- Feedback from Hub-IT events.

Output/Format

- Dynamic HTML + form
- Database
- PDF

Direct link to other resources

- Ecosystem mapping
- HubIT Guidelines
- Assessment Tool
- Key Success Indicators
- Social Dashboard

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4.6 HUBIT GUIDELINES

Name of the resource HubIT Guidelines

Category Advice

Description

The main purpose of the HubIT Guidelines for responsible ICT is to help put the HubIT concept into action, suggesting solutions coming from the collaboration of ICT and SSH, for how to implement RRI in ICT. This resource refers to a set of procedures, methodologies and examples about how include responsibility and inclusiveness in ICT research and innovation. The Guidelines have to be general and targeted primarily at ICT experts.

Thus, they are all about giving advice on how to implement RRI with the support from SSH. Users may be interested in understanding how to manage different stages of research, innovation and development, when a project/initiative moves from the status of "idea" to the deployment stage.

This will be achieved by means of two main components: A generic set of guidelines and a hands-on method to foster SSH and ICT collaboration. These components are described in further detail below.

Component 1: Guidelines for responsible ICT

In a short and simple manner these co-created guidelines will provide a set of recommendations and procedures towards good practices for implementing RRI in ICT with support from SSH. The guidelines will be generic and targeted primarily at ICT developers and researchers in general. Thus, separate guidelines for different ICT groups will not be produced. The initial idea is that the guidelines will focus on procedures and not include actual examples. In the longer run we suggest that they in particular direct the users' attention to other resources of the HubIT Metropolis which for instance can provide these "examples", e.g. the 'Good Practice Repository'.

Component 2: Methodology to foster SSH and ICT collaboration

The second component of the HubIT guidelines will be a method to foster SSH and ICT collaboration: The inclusive hackathon. This method will be developed, tested and improved in the WP4 hackathons taking place in the third year of the project. Besides fostering constructive interactions between the two communities the method will support them to develop new ideas in line with RRI standards.

Implementation and kind of interaction with users

Co-creation is very central to the development of this resource. The actual content for the generic guidelines interdisciplinary and responsible ICT research and innovation (component 1) will be co-created with the participants and users of the HubIT workshops and the HubIT Metropolis. The guidelines working group will "pick their brains" for barriers and solutions to more and better RRI in ICT with support from SSH and thus build the content on previous experiences and lessons learned. In this way we ensure that the HubIT guidelines for responsible ICT in the end will meet the future users' needs and demands and thus match their actual reality. The co-creation of content will take place at the many HubIT workshops and directly on the HubIT Platform "in a wiki-like format" using Google forms.

To sum up, the content of the generic guidelines will thus be generated throughout the lifespan of the project. When the content has been further developed, it will be tagged with filters which will give the user the possibility to search for topics which are of particular interest to him/her. Our initial idea is to filter the topics by phases of an innovation process.

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The inclusive hackathon will follow a similar process. Based on the learning from particularly the HubIT workshops of WP3 a methodology will be developed and then applied and tested inthe WP4 hackathons. Its application will be evaluated, and the evaluation results will then be used to improve the methodology. Afterwards it will then be made available as part of the HubIT guidelines.

The implementation of this resource in the Platform

The Guidelines are given as pieces of advice for how to develop responsible ICT. The Guidelines will mostly be plain text with some nice illustrations.

Under the metaphor “Policy District” the Platform allows users to access Guidelines by two different sections:

- External resources on implementing RRI in ICT
- New method for inclusive hackathons

Scope

Overall, the HubIT guidelines will provide simple and “easy to apply” procedures on how to implement RRI in ICT with support from SSH. The guidelines will mainly be targeted at ICT developers. The actual content for the guidelines will be co-created with HubIT’s target groups.

Target

As suggested by the experts the *main target group* of the HubIT guidelines is:

- Business & Industry

Secondary target groups are:

- Policy makers
- Research
- Education

Expected impact

This resource is expected to strengthen both the implementation of RRI in ICT and the collaboration between SSH and ICT. It will increase awareness about the importance of RRI in ICT and the potential role of SSH in this context. It will provide hands-on solutions for how to overcome barriers to responsible development of ICT and to collaboration between ICT and SSH communities; barriers and solutions that to a large extent are identified and suggested by the target groups of the HubIT project and thus the potential future users. This user-centred approach to the content development further increases the chances of real impact.

Content

- Procedures
- Methodologies
- Examples

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- Indicators of successful RRI application
- Links to relevant organisations and experts

Sources

- Hub-IT project workshops in WP3 and WP4
- Experts' meetings
- Advisory Board workshops
- Current definitions (Desk Research)
- Input submitted on the HubIT Platform

Output/Format

- HTML
- PDF

Direct link to other resources

- All resources

4.7 ASSESSMENT TOOL

Name of the resource Assessment Tool

Category Tool

Description

The Assessment Tool provides an opportunity to evaluate how well an organisation holds up to the goals of Responsible Research and Innovation. The tool provides a set of procedures that will help stakeholders to understand and consolidate RRI within their organisation. It will consider four stages specified below of the implementation of RRI methods into an initiative and within an organisation:

1. Explore and engage: aiming at bringing together a core team and a set of objectives within an organisation for implementing RRI in ICT R&I.
2. Build and formalise: establish connections among different organisations dealing with the same RRI issues, enabling learning from each other's experiences and adopting joint plans or programmes.
3. Implement and evaluate: evaluation and assessment of the goals of stage1 and 2.
4. Develop further, replicate and institutionalise: enabling the scaling up and replication of goals and procedures on a more formal level.

<u>The implementation of this resource in the Platform</u>

This will be an interactive tool, ***we can call it self-reflection or self-assessment tool***; it is based on an online form developed to provide indicators for framing user organisations' level of RRI.

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Under the metaphoric concept of “Assessment Campus” the Platform allows users to access the Assessment Tool as a questionnaire that allows assessing the RRI commitments and ICT/SSH collaboration potential on the level of the organisation, project, event and the individual.

This tool will present the measurable success indicators for each of the RRI criteria.

Scope

Provide procedures for assessing the implementation and consolidation of RRI into organisations in production and use of ICT. Enable the possibility to identify the value of the return of investment of SSH research within ICT R&I. This will be done by interviewing stakeholders regarding their perceptions about the return of SSH research within ICT R&I.

Target

- Policy makers
- Research
- Education
- Business & Industry
- Civil Society

Expected impact

Assessment of coherent and harmonized RRI adoption for further replication and scaling up. Awareness of stakeholders regarding adopting RRI principles and methods.

Content

- Assessment Procedures (assessment tools)
- Examples of the assessment tools
- Level of collaborations between the SSH and ICT for implementing RRI
- Indicators of successful implementation
- Links to relevant studies, projects, experts

Sources

- Good Practice Repository of responsible ICT research and innovation with SSH input
- Experts’ meetings
- Advisory Board workshops

Output/Format

- Dynamic HTML
- Form
- Database

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Direct link to other resources

- HubIT Concept
- HubIT Guidelines
- Key Success Indicators

4.8 FACT SHEETS, POLICY BRIEFS AND POLICY RECOMMENDATION

The "Fact Sheets and Policy Briefs" and "Policy Recommendations" have been originally planned as two different resources. Even though they still refer to different perspectives of use of project progresses and outcomes, they have been formally merged into one unique category in the FM portal, since the ways of communicating are very similar. While the resource unites fact sheets, policy briefs and policy recommendations under one umbrella, we agreed on distinguishing the specific functions of fact sheets and policy briefs, as well as the different forms they will take. Policy briefs have also been recognized as extension and basis for the recommendations (prepared on the later stages of the project).

Name of the resource Fact Sheets, Policy Briefs and Policy Recommendations

Category Advice

We decided to divide the specification of this resource into two different and more coherent resources: "Fact Sheets" and "Policy Briefs", the latter including also the recommendations.

Specification of Fact Sheets

Description of Fact Sheets

A Fact Sheet is a page (A4) of text describing interesting achievements or areas of interest of the project. For example, presenting highlighted results of the projects or topics related to the project and its results, while introducing the most important facts and information about RRI in ICT.

Fact Sheets can contain links to further relevant information. Fact Sheets need to include text and can incorporate a video or other digital media.

This is a resource targeted at the general public and changing the perception towards societal challenges. Fact sheets will be effective only if we use innovative methods of communication.

Implementation and kind of interaction with users

Factsheets can be disseminated using email, twitter, blogs or other types of media. It is useful to have different formats for the same Factsheet, depending on the media used. For example, we can have a teaser + a 10 second digital video or animated PPT + infographic + a full downloadable document.

The implementation in the Platform of this resource

On the HubIT Platform, the Fact Sheet link could be depicted with a "teaser": a catchy title, picture and short summary; users can click on a link to access the full document.

Also, a "teaser" for hooking the reader through "social media" like Twitter and Facebook, could be produced.

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Homepage contents for the tool: In the home page the "teaser" for the Fact Sheet is included, while the full document includes: text + link + pictures.

Fact Sheets will be listed within a dedicated section in order of latest outcomes / releases. A search-option, through keywords (target, scope), will be available. Fact sheets shall be downloadable from the HubIT website as a PDF or JPG.

Frequency: During the first year of the project at least 2 factsheets will be produced to promote the project outcomes. A minimum of 6 factsheets for each of years 2 and 3 will be released.

Scope

The Fact Sheets will serve to target the general public and HubIT users and help change the perception towards societal challenges and RRI principles. Different social media can be used for spreading to the general public the Fact Sheets to increase awareness on Responsible Research and Innovation.

Target

- Policy makers
- Research
- Education
- Business & Industry
- Civil Society

Expected impact

Provide input to other RRI-related initiatives and change the perception towards societal challenges and RRI principles by all targeted users.

Content

Each Fact Sheet will consider facts of the project or initiative, steps done and milestone achieved, lessons learnt.

For example:

- The added value of cross-cutting (ICT+SSH) cooperation, highlighting how different perspectives can help find new solutions e.g. support job creation
- How to ensure that citizens and users are aware of and understand their fundamental rights, by describing the impact on privacy, ethics, gender etc.
- Good Practices
- Information and links to relevant associations, organisations, experts, studies

Sources

- Good Practice Repository of responsible ICT research and innovation with SSH input
- Experts' meetings
- Advisory Board workshops
- Recent relevant publications

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Output/Format

- HTML
- PDF

Direct link to other resources

- HubIT Guidelines
- Policy Briefs
- Good Practice Repository of responsible ICT research and innovation with SSH input
- Social Dashboard

Specification of Policy Briefs (including Policy Recommendations)

Description of Policy Briefs

These are policy communications related to responsible ICT innovation, resulting from the activities of the project. They will help ensure that the lessons and knowledge drawn from Horizon 2020 will be passed to the future EU Horizon Europe programme.

Policy Briefs will be short, focused and attractive descriptions about the relevance of one or more SSH issues in the ICT research and innovation process. They will help recognise the need to align research and innovation with the values, needs and expectations of society.

Policy Briefs shall be written in a language that is clear and attractive enough to engage also non-specialists and to provide them with a concise overview of the role of RRI within ICT including recommendations. The Policy Recommendations are an output of a Policy Brief.

Implementation and kind of interaction with users

A Policy Brief includes a title, a subtitle, keywords, a description, owner/contact information, a date of uploading, the user target group(s) that the Policy brief is targeted to, connections to the RRI dimension. This is described in the table that follows.

Table 14: Structure of Policy brief

Policy brief (The symbol * indicates a set of values specified in the tables of section 4.3)	
Descriptors	**Values**
Title of the Policy Brief	
Subtitle of the Policy Brief	
Keywords of the Policy Brief	
Description of the Policy Brief	
Name of the owner/responsible organization of the Policy Brief	
Type of the owner/responsible organization of the Policy Brief	List of stakeholders' type*

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Contact person of the owner/responsible organization of the Policy Brief	
Date of publication of the Policy Brief	
Users' target group	List of stakeholders' type*
RRI dimensions involved in the Good Practice	List of RRI dimensions*

The title has to be meaningful e.g. "How to balance e-skills in ICT research". Policy Briefs could be a maximum of 4 pages of text, links and pictures.

Policy Briefs must be:

- Written in a language that presents the findings and recommendations of HubIT to a non-specialised audience. They have to contain links to further relevant information
- Media for exploring an issue
- Means to provide policy advice

The implementation of this resource in the Platform

Under the metaphor "Policy District" the Platform allows users to access the Policy Briefs. Policy Briefs will be listed within a dedicated section in order of latest outcomes / releases. A search-option, through keywords (target, scope), will be available. The full documents (of maximum 4 pages) can include: text + link + pictures+ recommendations.

There is the possibility to download the page as a PDF, option to share on social media, option to propose improvements/leave contributions and two options for further reading.

Scope

The Policy Brief will serve as input into other Coordination and Support Actions in H2020, projects and programmes targeted to RRI and they will contribute towards future research agendas in ICT and SSH as part of the activities carried out with the assistance of the Advisory Board and the policy workshops carried out in WP3 (in T3.4).

The elaboration of Policy Briefs is expected to improve several aspects of the current and future Framework Programme, such as the need to come up with solutions already at the proposal stage, which for example will help to reduce the time spent preparing project proposals supporting people in addressing ethics challenges defined by EC FPs.

Target

- Policy makers
- Research
- Education
- Business & Industry
- Civil Society

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Expected impact

Provide input to RRI-related initiatives. It is expected that the Policy Briefs will describe and specify approachesto facilitate “responsible” action and identify early warning of any damaging ICT-based initiatives and practices, cultures, etc., so far as it can be anticipated and controlled in a way consistent with the social expectation and ethics. Moreover, it will ensure ethical and responsible processes in developing ICT related strategies, as well as how to better integrate these processes into ICT research practices on all levels.

The impact of the policies could be influenced by national rules and regulations as well as cultural differences.

Content

Each Policy Brief will consider:

- RRI criteria, explaining the principles of adopting RRI into the ICT R&I process
- The policy context of SSH-ICT collaboration
- The policies defining the framework of inclusion of RRI in ICT

In addition:

- Act as an input into the EC's consultation process by providing recommendations
- It is not enough to write about “what" should be changed - also write about "how". It is necessary to propose the instruments to implement the recommendations
- They provide different cases for different actors
- It is necessary to be precise which kind of stakeholders the Policy Brief is targeting

Sources

- Good Practice Repository of responsible ICT research and innovation with SSH input
- Experts’ meetings
- Advisory Board workshops

Output/Format

- HTML
- PDF

Direct link to other resources

- HubIT Concept
- HubIT Guidelines
- List of the Key Challenges
- Good Practice Repository of responsible ICT research and innovation with SSH input
- Social Dashboard

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4.9 KEY SUCCESS INDICATORS

Name of the resource Key success indicators

Category Tool

Description

This resource will provide the target audience groups with a set of Key Impact and Performance Indicators for each one of the RRI dimensions, aiming to assess the implementation and consolidation of RRI in different contexts (tasks, projects, societal values and initiatives implementation) and organisations involved in the production and use of ICT. This will include both, qualitative and quantitative indicators. Each Key Indicator can be referred to specific processes, outcomes and perceptions to be evaluated for each RRI dimension relevant to the tasks, projects, organizations to be assessed. This resource provides an opportunity to identify personalised key success indicators.

Structure of information

Indicators are defined in terms of process, outcome and perceptions.

Table 15:Structure of indicators

Indicators information structure per RRI dimension (The symbol * indicates a set of values specified in the tables of section 4.3)	
RRI dimension	List of RRI dimensions*
Set of key indicators	
Key indicator name (repeat for all the key indicators of an RRI dimension)	
Description of the Key indicator	
Key indicator category	Process measure
	Outcome measure
	Perception measure

Implementation and kind of interaction with users

This is a descriptive tool. A Link to other similar key indicators shall be provided.

The implementation of this resource in the Platform

Under the metaphor “Assessment Campus” the Platform allows users to use a set of indicators to assess the implementation and consolidation of RRI in different contexts (tasks, projects, societal values and initiatives implementation) and organisations in production and use of ICTand ICT/SSH collaboration potential.

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Scope

Identify a list of success factors to be monitored during the RRI-related activities of the interested stakeholders.

Target

- Policy makers
- Research
- Education
- Business & Industry
- Civil Society

Expected impact

Provide tailored, personalized assessment tools for evaluating and consolidating the success of implementing an RRI approach in different contexts (tasks, projects, societal values and initiatives implementation) and organisations.

Content

- Description of RRI assessment approach
- Description of RRI dimensions
- List of key impact and performance indicator for each dimension categorized according to processes, outcomes and perception measures

Sources

- RRI indicators and MORRI indicators
- Good Practice Repository of responsible ICT research and innovation with SSH input
- Experts' meetings analysis and suggestions
- Advisory Board workshops recommendations
- RRI Self Reflection Tool (RRI Toolsat: https://www.rri-tools.eu/)
- HubIT initial assessment results

Output/Format

- HTML
- PDF

Direct link to other resources

- HubIT Guidelines
- Good Practice Repository of responsible ICT research and innovation with SSH input
- Assessment Tool
- HubIT Concept

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4.10 SOCIAL DASHBOARD

Name of the resource Social Dashboard

Category Tool

Description

This resource is a repository of experts, researchers, and other users and organisations interested in cooperating in RRI-related activities in H2020 and can also be used in the future EU Horizon Europe programme. Information included in the repository will include: Contact information, organisations, expertise, topics of interest, technologies, methodologies, H2020 call topics, etc.

Implementation and kind of interaction with users

The format of the Social Dashboard will include user profiles with functionalities for interacting with other users.

Structure of information

The Social Dashboard will be based on the user's profile with personal information such as: photo, friends list, account security settings, account privacy settings, sharing options, internal private messages, news feed, etc.

The implementation of this resource in the Platform

Users will have the possibility to access, upload and present their research capacities, running projects, results and future project ideas. Possible cooperation will be established by matching clusters of interest and by the initial registration process, which will clearly define users as SSH/ ICT/ RRI experts. A link to the Good Practice Repository of responsible ICT research and innovation with SSH input and to the Ecosystem Mapping will be provided.

Scope

Support joint initiatives for future calls and other RRI-related activities, increase collaboration among users, increase collaboration among ICT and SSH researchers.

Target

- Policy makers
- Research
- Education
- Business & Industry
- Civil Society

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Expected impact

Increase the participation and the quality of ideas submitted for RRI-ICT future activities, increase awareness of different ways SSH and RRI experts could contribute and facilitate cross-sectoral collaborations.

Content

- Actors information (ICT+SSH)
- Proposal ideas, Expertise
- EC programme call topics
- Other opportunities

Sources

- Other existing similar tools
- Ecosystem mapping
- Self-submissions of interested actors
- Contacted actors
- Hub-IT partner networks
- ICT NCPs
- EU funded projects which have synergy with HUB-IT

Output/Format

- Dynamic HTML
- Form
- Database
- Social approach (ICT - SSH)

Direct link to other resources

- Ecosystem Mapping
- Good Practice Repository of responsible ICT research and innovation with SSH input

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5. CONCEPT OF THE HUBIT PLATFORM: THE INTENDED ACTUALISATION AND APPEARANCE OF THE RESOURCES

This section provides the concept of the HubIT collaborative Platform designed and implemented in Task T6.2. A first version of the Platform will be available at:

http://platform.hubit-project.eu

The concept of the online collaborative Platform is the following:

The HubIT Platform is an interactive environment, where the project information and the tools and services of the European Framework Model can be accessed in a modular, visually attractive and dynamic way.

The concept of the HubIT Platform functional scheme is shown below**.**

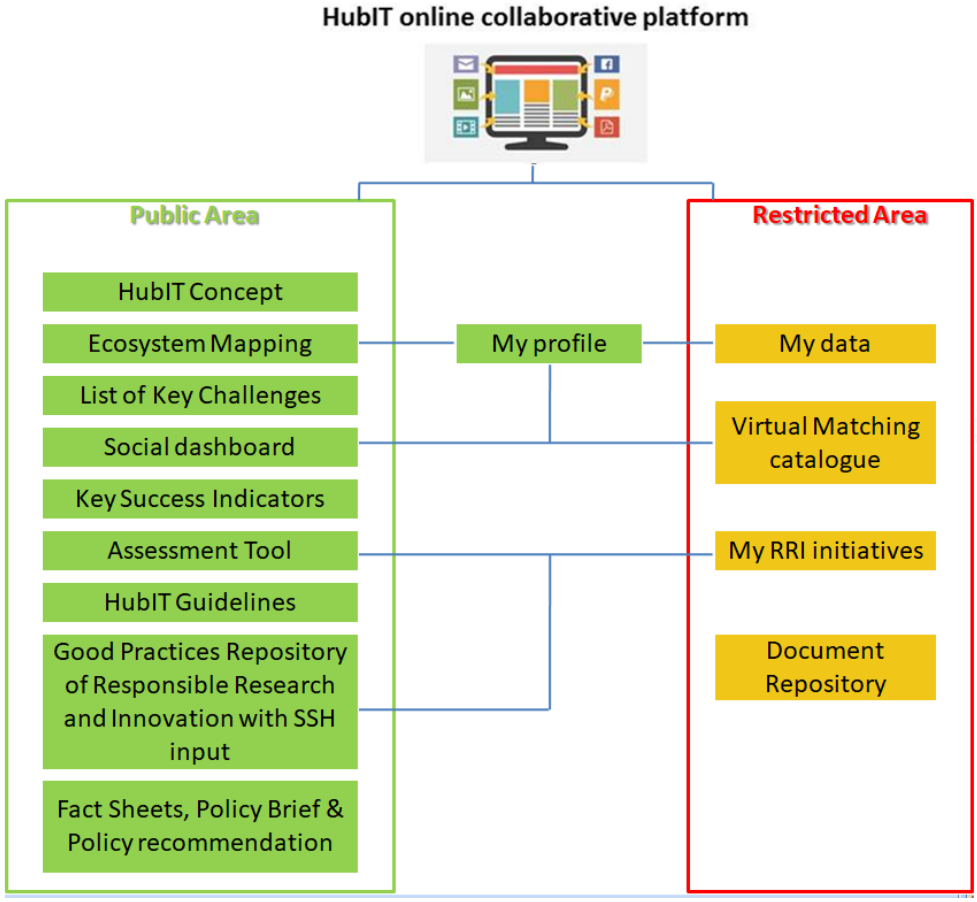

Figure 2: Functional scheme of the HubIT online collaborative Platform

The Platform can be considered as the central hub supporting interaction among the stakeholders of the multidisciplinary communities.

The HubIT Platform dashboard consists of a restricted area and a public area, each one structured as described below.

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Restricted area. This area has to be accessed via personal credential. It contains:

- My data. Personal and sensible data.
- Document repository. A personal cloud, including a list of preferences of online published documentation. Ongoing documentation about project collaborations, administrative and operational space, WP3 and WP4 activities (Workshops, Inclusive Hackathons, Creative Tandems, Interactive ICT labs)
- My RRI Initiative. A list of online modules which users can fill with information and details about their ICT initiatives. This shall be a private document unless the user-owner explicitly allows the publication.
- Social Dashboard. The virtual place where the users can communicate with each other, set personal preferences, engage in private chats. Only after user explicit agreement, "private" data might be published in the "events" page.

Public area. This area can be accessed without any authentication procedure. It contains:

- My profile. Visualization of competence, technology, needs, offers, interests, etc. of the registered users. It is a limited selection of the "personal data" section.
- Calendar / Events. HubIT project events, ICT and SSH events. It could include a Social Wall.
- European Framework Model and its resources. The matchmaking tool will be available only for registered users.

Aiming to facilitate the access and to maximise the users' engagement, the Platform will use the "Metropolis" metaphor to represent the different resources. All the activities and resources deployed in the project are made available at different locations of the "HubIT Metropolis". This will facilitate and encourage constructive interactions between stakeholders leading to a responsible approach to Research and Innovation. The main elements of the "Metropolis" metaphor are:

- The "Concept Square", where all the ideas and concepts of HubIT are explained. Each user can start her or his path from this square
- Take a walk in the Grand Avenue to the majestic "Policy District". Learn the trends and contributions to shape the policy blueprint for the SSH-RRI integration into ICT-enabled technologies
- Have fun solving interesting conundrums at the "Amusement Park of ICT Challenges". Contribute to link SSH and RRI practices with key ICT issues
- Make valuable connections at the "Get Connected Airport". Engage and network with other peers and stakeholders
- Check out the prestigious "Assessment Campus". Make a self-assessment and find out if SSH-RRI requirements for ICT are met

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6. ANNEX 1: SUMMARY OF SUGGESTIONS FROM THE EXPERTS WORKSHOP OF MARCH 2018

The ANNEX 1 provides a description of results from the analysis for each one of the ten resources ("The concept of Responsible Research and Innovation informed by SSH in ICT", "Matrix of the key challenges", "Ecosystem mapping", "Best Practice Repository of responsible ICT research and innovation with SSH input", "Guidelines for Responsible ICT Research and Innovation informed by Social Science SSH", "Tool for assessment of RRI and SSH perspectives in ICT within an organisation", "Fact Sheets and Policy Briefs", "Policy Recommendations", "Key measurable success indicators", "Virtual Matching Catalogue") already proposed in Deliverable D2.2 and discussed during the Expert workshop in March 2018. **In Deliverable D2.2 and during the Expert workshop these resources were referred as "Tools" and for this reason the analysis was carried out referring to them as Tools.**

TOOL 1 - The concept of Responsible Research and Innovation informed by SSH in ICT

Question 1: Is it perceived as useful by users? Explain why

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- No, it is confusing, incomprehensible, too long	The language is confusing (it should be inclusive).
- SSH comes up only in the end and in a passive way --> bring co-production/communication forward	Moreover, there is an unclear role for SSH. Indeed, SSH is only contributing in defining the social aspects
- Put in simple words	It is necessary a simplified language to be more inclusive. All the formulation needs to be simplified.
- The value is correct but the implementation no. It should be co-responsibility of ICT and SSH in making innovation and proper communication	
- not ICT, "humanizing technology", "sustainability"	Focus on human challenges and consider what ICT can do, humanizing technology.

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, it includes multicultural dimension on ICT development (multi/inter cultural co-creation)	Multicultural stakeholders could be involved (Social scientists have a role in understanding how to produce an added value, include the multi/inter cultural dimensions) The ICT included in the co-creation approach when we have to deal with ICT and SSH.
- Yes, consider definitions of SSH and ICT ---> Is it possible to have the same understanding?	
- Yes, but it lacks of rigor/structure/assessment	The different perspectives of SSH and ICT (different perspectives for SSH and un-relativistic perspectives from ICT)

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	till now did not produced the necessary rigor and structure for the concept.
- Yes, but an interdisciplinary approach is needed	

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- It is good as concept but difficult to put in practice	
- It is very useful as a pedagogical tool, good "starting" framework	
- The idea is not new but interdisciplinary activities are still lacking, RRI language in itself is not interdisciplinary.	

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- No, too many definitions	
- Yes, because people will ask	
- Yes, but it needs to be structured	
- Yes, for future development of research	

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, many new questions arise from new technical devices (ex. Social networks) - Technical progress can lead to manipulation of minds - even more than what we see now --> "unintended social and economic impacts" of new technologies. SSH is important here	
- Yes, "unintended social and economic impacts" again by these experts mentioned, but there are other aspects too. Things HubIT is asking here (i.e. in the concept) are sometimes conflicting. Keep that in mind!	
- No, the sentence about "engagement of stakeholders" is too general. Make it more concrete! E.g. what do we mean by "stakeholders"? Not just involve potential users - society in general should be involved.	

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, for the concept	
- Yes, because It is understandable	It is an interesting definition, but first of all it is too complicated. Just reading the title, the concept is too long. It needs to be simplified.
- Yes, It is interesting	

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, ethics and privacy	The concept is useful for thinking on how ICT can carry out research and innovation considering the problems related to privacy and to the ethical issues.
- If the end users are forced to use it (legally), widespread/ National-EU level --> political issue	The concept can be useful, but to be widely shared it is necessary to force its use, as done for privacy and ethical issues (currently some activities in projects requires informed consent, etc.).

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- Yes, designing of social context rather than the software	Interactive design methodology needs to be changed. It is important to have the point of view that considers designing of social context and not only software. In the concept an explanation of design is necessary. It should provide a new perspective, with a new way of thinking. When you are thinking a new technology, it is important to think to new interactions considering what changes at level of social interaction. How people act, interact, build relationships, how morality changes. Involving all actors can be useful for redesign the social interaction, anticipating what is going to change.
- It is useful but it should be implemented (forced). Positive and negative aspects should be considered. SOCIETAL CONTEXT.	Interaction of ICT and SSH needs of a largest interaction and it needs to be implemented. This helps to identify the social context.

Classification of the suggestions from the seven working tables: Usefulness

YES	YES, BUT....	NO, BUT....	NO
- Yes, it includes multicultural dimension on ICT development (multi/inter cultural co-creation)	- SSH comes up only in the end and in a passive way --> bring co-production/communication forward	- No, the sentence about "engagement of stakeholders" is too general. Make it more concrete! E.g. what do we mean by "stakeholders"? Not just involve potential users - society in general should be involved.	- No, it is confusing, incomprehensible too long
- It is very useful as a pedagogical tool, good "starting" framework	- Put in simple words		- No, too many definitions
- Yes, because people will ask	- The value is correct but the implementation no. It should be co-responsibility of ICT and SSH in making innovation and proper communication		
- Yes, many new questions arise from new technical devices (ex. Social networks) - Technical progress can lead to manipulation of minds - even more than what we see now --> "unintended social and economic impacts" of new technologies. SSH is important here	- not ICT, "humanizing technology", "sustainability"		
- Yes, for the concept	- Yes, consider definitions of SSH and ICT ---> Is it possible to have the same understanding?		
- Yes, because It is understandable	- Yes, but it lacks of rigor/structure/assessment		
Yes, It is interesting	- Yes, but an interdisciplinary approach is needed		
- Yes, ethics and privacy	- It is good as concept but difficult to put in practice		

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	- The idea is not new but interdisciplinary activities are still lacking, RRI language in itself is not interdisciplinary.		
	- Yes, but it needs to be structured		
	- Yes, "unintended social and economic impacts" again by these experts mentioned, but there are other aspects too. Things HubIT is asking here (i.e. in the concept) are sometimes conflicting. Keep that in mind!		
	- If the end users are forced to use it (legally), widespread/ National-EU level --> political issue		
	- Yes, designing of social context rather than the software		
	- It is useful but it should be implemented (forced). Positive and negative aspects should be considered. SOCIETAL CONTEXT		
8	**13**	**1**	**2**

Analysis of the suggestions

Positive versus negative
- 21 suggestions to maintain the tool but 13 of them point out criticalities in the elaboration of the tool and suggest modifications aiming to obtain an improvement.
- 3 suggestions to delete the too, however 1 of them points out the criticalities that must be removed more than remove the tool itself.

List of the criticalities
The main criticalities concern:
- the used language and terminology,
- the structure and the rigor of the definition,
- the (social) contextualization,
- the implementation issues,
- co-production and co-responsibility issues among SSH and ICT researchers.

Question 2: Potential problems/limitations in use

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Not clear	The concept of Responsible Research and Innovation informed by SSH in ICT is not clear, too complex and the language used is not easily understandable.
- Patronizing to ICT	It is important to establish that ICT and SSH will be equal partner in RRI discussion.
- Passive role of SSH (the risk is the predominance of one aspect on the others)	It is important to establish that ICT and SSH will be equal partner in RRI discussion.
- The question of who are we talking to?	It is important to establish who the actors who share the definition are.
- At the same time, the whole burden of RRI in ICT on SSH	

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Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- How ICT and SSH could be coordinated	We are not just talking about everything with different stakeholders but also the multi-cultural dimension that was the first impact in our team
- How can be guaranteed that the ICT is addressing the different SSH dimensions?	It has to connect values at social level to the ICT issues.
- Social science is social or science?	Social science is social by definition; the technology that came up is deeply connected to the society that produces it. If you change the context, also the use could change according to the values, and the overall asset of that society. ICT science differently from social science is un-relativistic and it reached one only true.
- Main barrier is the lack of understanding each other capability --> lack of trust	

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- We need a type of language and education to accommodate RRI in ICT;	
- Different disciplines and actors have different interest to start with	

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Common language (different) ICT+ SSH + RRI	
- Management of collaboration	
- Vision or goal not shared	

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- The concept (in its current stage) can be misused. Have that in mind!	

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Missing benefits (concrete outcomes)	
- Too many acronyms	
- Refresh the title unique selling point	

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Active participation of SSH, at the moment in passive implementation	
- Ethics, privacy	

Classification of the suggestions from the seven working tables: <u>Limitations in the use</u>

Very low	Low	Medium	High
- Too many acronyms	- Patronizing to ICT	- The question of who are we talking to?	- Not clear

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- Refresh the title unique selling point	- Passive role of SSH	- Main barrier is the lack of understanding each other capability --> lack of trust	- Missing benefits (concrete outcomes)
	- At the same time, the whole burden of RRI in ICT on SSH	- We need a type of language and education to accommodate RRI in ICT;	
	- How ICT and SSH could be coordinated	- Different disciplines and actors have different interest to start with	
	- How can be guaranteed that the ICT is addressing the different SSH dimensions?	- Common language (different) ICT+ SSH + RRI	
	- Social science is social or science?	- Ethics, privacy	
	- Management of collaboration		
	- Vision or goal not shared		
	- The concept (in its current stage) can be misused. Have that in mind!		
	- Active participation of SSH, at the moment in passive implementation		
2	**10**	**6**	**2**

Analysis of the suggestions

Positive versus negative
- 12 suggestions address very low or low limitations in the use.
- 8 suggestions address medium and high limitation.

List of the limitations
- Roles of the different disciplines
- Coordination and collaboration among the different disciplines
- Absence of a common vision among the disciplines
- Different languages and interests
- Ethical and privacy issues
- Difficulties in understanding potential benefits

Question 3: How to use/How to improve/Suggested content and functionalities

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Put in simple words, 1 paragraph (+ tweet, hashtag)	Provide a language for communication (shorter than one paragraph) using also hashtag, tweets.
- Not use RRI, SSH?	Avoid to use RRI, SSH in the communication of the concepts it is not easily understandable
- Flash out "communication" in ICT-SSH	It is necessary focusing communication intrinsic crossing ICT and SSH
- The concept might be dead, the language is dead --> need new simple words	The concept and the used language need to be more effective, and for this reason it will be necessary to use a new and simplified language.

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- Definition: "...is an inclusive approach to research and innovation, aimed at ensuring that social aspects and perspectives are followed by ICT".	The definition of the concept should be re-written as follows: "The concept of Responsible Research and Innovation informed by SSH in ICT is an inclusive approach to research and innovation, aimed at ensuring that social aspects and perspectives are followed by ICT"

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- To analyse how it is being done this parallelism	
- SSH and ICT need to define a shared approach	

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- We need a concept and real understanding of what we mean by it. Definition alone is not enough - what is responsible?	
- Need to raise awareness - for that all tools are useful	Also, the concept and the language used has to contribute at improving awareness of the concept
- Are 6 dimensions enough? Are they the best and the most useful?	It is important to understand if it is necessary to add other dimensions in addition to the existing 6 RRI dimensions, also according to their usefulness

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Inputs and output description	For example, ICT has to produce socially acceptable and ethically desirable outcomes.
- Do not include RRI definition within who is helping whom	it is important to avoid to confuse definition with the actors involved and their roles
- It should be an umbrella goal	it is important to avoid to confuse definition with the actors involved and their roles
- Shared governance between ICT and SSH (Adhocracy)	

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- RRI steering committee at an EU-level and in different areas (sub-committee) to ensure the R&I process is responsible and transparent	
- Financially empowering people/organizations (e.g. NGOs) to be a part of the process	

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Use boxes, highlights	An effort should be made to change the name of the concept by making it more captivating and interesting. It is also necessary to define why to work on responsible research and innovation and which are the benefits.
- Checklist to get funding in the future EU Horizon programme	

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Hard and soft impacts	
- New ways --> be more precise (how morality changes, power relations, show that you are involving partners, etc.)	In the sentence "…new ways of thinking…" please specify better how morality changes, …
- Better solutions for more people, economic growth and better life	It should contain solutions to different kinds of people (gender, rights, tradition)

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- Add territorial aspect - inequalities	Territorial dimension is connected with societal challenges, inequalities, etc.
- The negative aspect of ICT - no post offices, how to find new solutions for people who have lost poles, etc.	ICT introduces a new perspective at territorial level changing services. One question is how to promote acceptance of people? How social science can support innovation? For example, "How to convert people working in a post office according to new professionals" if post offices will disappear? This is a very relevant issue for the next years.

Classification of the suggestions from the seven working tables: <u>Improvement / how to use (difficulty of implementation)</u>

Very low	Low	Medium	High
- Put in simple words, 1 paragraph (+ tweet, hashtag)	- The concept might be dead; the language is dead --> need new simple words	- Are 6 dimensions enough? Are they the best and the most useful?	- Not use RRI, SSH?
- Use boxes, highlights	- Need to raise awareness - for that all tools are useful	- Do not include RRI definition within who is helping whom	- Shared governance between ICT and SSH (Adhocracy)
	- Shared governance between ICT and SSH (Adhocracy)	- It should be an umbrella goal	- Financially empowering people/organizations (e.g. NGOs) to be a part of the process
	- Inputs and output description	- RRI steering committee at an EU-level and in different areas (sub-committee) to ensure the R&I process is responsible and transparent	
	- Checklist to get funding in the future EU Horizon programme	- To analyse how it is being done this parallelism (ICT – SSH)	
	- Add territorial aspect - inequalities	- SSH and ICT need to define a shared approach	
	- The negative aspect of ICT - no post offices, how to find new solutions for people who have lost poles, etc.	- We need a concept and real understanding of what we mean by it. Definition alone is not enough - what is responsible?	
		- New ways --> be more precise (how morality changes, power relations, show that you are involving partners, etc.)	
		- Better solutions for more people, economic growth and better life	
		- Hard and soft impacts	
2	**7**	**10**	**3**

Very low: factors internal to the project and easy to implement

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Low: factors internal to the project and request an effort to implement
Medium: factors external to the project but the project has resources for impacting
High: factors external to the project but the project doesn't have resources for impacting significantly

Analysis of the suggestions

Internal versus external factors
- 9 suggestions of improvements mainly related to factors internal to the project.
- 13 suggestions of improvements mainly related to factors external to the project, but on 10 of them the project could have some influence.

Need - Action

CLUSTER	NEEDS	ACTIONS
A -Clear definition, structure and common language	- Yes, but it needs to be structured - Yes, but it lacks of rigor/structure/assessment - No, it is confusing, incomprehensible, too long - No, too many definitions - Too many acronyms - Yes, for the concept - Yes, because It is understandable EXPLANATION: - it is an interesting definition, but first of all it is too complicated. Just reading the title, the concept is too long. It needs to be simplified. - Yes, It is interesting - Put in simple words - The concept (in its current stage) can be misused. Have that in mind! - We need a type of language and education to accommodate RRI in ICT;* - Not clear - Common language (different) ICT+ SSH + RRI - Refresh the title unique selling point - It is good as concept but difficult to put in practice - Yes, because people will ask	- The concept might be dead, the language is dead --> need new simple words Explanation: The concept and the used language need to be more effective, and for this reason it will be necessary to use a new and simplified language. - Put in simple words, 1 paragraph (+ tweet, hashtag) - Not use RRI, SSH? Explanation: provide a language for communication (shorter than one paragraph) using also hashtag, tweets. Avoid to use RRI, SSH in the communication of the concept, as it is not easily understandable - Use boxes, highlights Explanation: An effort should be made to change the name of the concept by making it more captivating and interesting. It is also necessary to define why to work on responsible research and innovation and which are the benefits. - Need to raise awareness - for that all tools are useful* Explanation: also, the concept and the language used has to contribute at improving awareness of the concept - Do not include RRI definition within who is helping whom - It should be an umbrella goal Explanation: it is important to avoid to confuse definition with the actors involved and their roles - We need a concept and real understanding of what we mean by it. Definition alone is not enough - what is responsible? - New ways --> be more precise (how morality changes, power relations, show that you are involving partners, etc.) Explanation: in the sentence "…new ways of thinking…" please specify better how morality changes …
B – Interdisciplinarity between ICT and SSH	- Yes, designing of social context rather than the software - SSH comes up only in the end and in a passive way --> bring co-production/communication forward - The value is correct but the implementation no. It should be co-	- Shared governance between ICT and SSH (Adhocracy) - Inputs and outputs description. Explanation: for example, ICT has to produce socially acceptable and ethically desirable outcomes. - To analyse how it is being done this parallelism (ICT – SSH) - Shared governance between ICT and SSH (Adhocracy)

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	responsibility of ICT and SSH in making innovation and proper communication	- SSH and ICT need to define a shared approach - The negative aspect of ICT - no post offices, how to find new solutions for people who have lost poles, etc.
	- not ICT, "humanizing technology", "sustainability"	
	- Yes, consider definitions of SSH and ICT ---> Is it possible to have the same understanding?	
	- The idea is not new but interdisciplinary activities are still lacking, RRI language in itself is not interdisciplinary.	
	- Yes, but an interdisciplinary approach is needed	
	- Main barrier is the lack of understanding each other capability --> lack of trust	
	- Patronizing to ICT	
	- Passive role of SSH	
	- At the same time, the whole burden of RRI in ICT on SSH	
	- How ICT and SSH could be coordinated	
	- How can be guaranteed that the ICT is addressing the different SSH dimensions?	
	- Management of collaboration (explanation: not hierarchical collaboration between ICT and SSH)	
	- Vision or goal not shared (explanation: between ICT and SSH)	
	- Active participation of SSH, at the moment in passive implementation	
	- Social science is social or science?	
C - Education	- It is very useful as a pedagogical tool, good "starting" framework	- Need to raise awareness - for that all tools are useful* Explanation: also, the concept and the education can contribute at improving awareness of the concept
	- We need a type of language and education to accommodate RRI in ICT;	
D –Engagement of target groups (stakeholders and society)	- No, the sentence about "engagement of stakeholders" is too general. Make it more concrete! E.g. what do we mean by "stakeholders"? Not just involve potential users - society in general should be involved.	- RRI steering committee at an EU-level and in different areas (sub-committee) to ensure the R&I process is responsible and transparent
	- The question of who are we talking to?	
	- Different disciplines and actors have different interest to start with	
E – Impact/outcomes/challenges	- ethics, privacy	- Financially empowering people/organizations (e.g. NGOs) to be a part of the process - Checklist to get funding in the future EU Horizon programme - Add territorial aspect – inequalities - Hard and soft impacts
	- It is useful but it should be implemented (forced). Positive and negative aspects should be considered. SOCIETAL CONTEXT	
	- Yes, it includes multicultural dimension on ICT development (multi/inter cultural co-creation)	

	- Yes, many new questions arise from new technical devices (ex. Social networks) - Technical progress can lead to manipulation of minds - even more than what we see now --> "unintended social and economic impacts" of new technologies. SSH is important here	- Better solutions for more people, economic growth and better life. (Explanation: it should contain solutions to different kinds of people (gender, rights, tradition) - Are 6 dimensions enough? Are they the best and the most useful? Explanation: It is important to understand if it is necessary to add other dimensions in addition to the existing 6 RRI dimensions, also according to their usefulness - Inputs and outputs description. Explanation: for example, ICT has to produce socially acceptable and ethically desirable outcomes.
	- Yes, "unintended social and economic impacts" again by these experts mentioned, but there are other aspects too. Things HubIT is asking here (i.e. in the concept) are sometimes conflicting. Keep that in mind!	
	- If the end users are forced to use it (legally), widespread/ National-EU level --> political issue	
	- Missing benefits (concrete outcomes)	

TOOL 2 - Matrix of the key challenges

Question 1: Is it perceived as useful by users? Explain why

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- This tool seems to step away from the HubIT concept	-
- "Challenges in society to be solved by cooperation between ICT/SSH"	-
- What is the user focus?	.

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Tool to hold interaction between ICT and SSH is important and welcome to understand each other	-
- The source of the key challenges should be SSH and ICT	-
- The need should come from SSH --> know their expectations	-
- Understanding of each area - not working in silos / source should be mixed	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- NO, as it is not clear what will it do, what will it afford, what it will inform you about	-
- Yes, if it will help to get funding	-
- It is not useful it is just another source of information	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, it is useful when there is an interaction with other entities	-
- Yes, it is useful when the research has an impact or needs input from society (research becomes application)	-

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Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, so not a strong yes according (CF questions listed).	
- For sure it is useful If you are doing an H2020 project, so you should follow that approach	
- It is a reasonable approach, but everything written on the list is not possible. Too much work for one project. There was a difference of opinion in the group about this.	

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, if it is a checklist, matrix	-
- No, because it is relevant for every ICT challenge	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, it is useful for funding reasons, it is a resource for research	-
- Challenges are also terming the solution	-
- Yes, if you cluster the challenges	-

Classification of the suggestions from the seven working tables: <u>Usefulness</u>

YES	YES, BUT....	NO, BUT....	NO
- Tool to hold interaction between ICT and SSH is important and welcome to understand each other	- "Challenges in society to be solved by cooperation between ICT/SSH"	- This tool seems to step away from the HubIT concept	
	- The source of the key challenges should be SSH and ICT	- What is the user focus?	
	- The need should come from SSH -> know their expectations	- NO, as it is not clear what will it do, what will it afford, what it will inform you about	
	- Understanding of each area - not working in silos / source should be mixed	- It is not useful it is just another source of information	
	- Yes, if it will help to get funding	- No, because it is relevant for every ICT challenge	
	- Yes, it is useful when there is an interaction with other entities		
	- Yes, it is useful when the research has an impact or needs input from society (research becomes application)		
	- Yes, so not a strong yes according (CF questions listed).		
	- For sure it is useful if you are doing an H2020 project, so you should follow that approach		
	- It is a reasonable approach, but everything written on the list is not possible. Too much work for one		

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	project. There was a difference of opinion in the group about this.		
	- Yes, if it is a checklist, matrix		
	- Yes, it is useful for funding reasons, it is a resource for research		
	- Challenges are also terming the solution		
	- Yes, if you cluster the challenges		
1	**14**	**5**	**0**

Analysis of the suggestions

Positive versus negative
- 15 suggestions to maintain the tool but 14 of them point out criticalities in the elaboration of the tool and suggest modifications aiming to obtain an improvement.
- 5 suggestions to delete the tool, all the 5 suggestions point out the criticalities that must be removed more than remove the tool itself.

List of the criticalities
The main criticalities concern:
- the need to introduce a better cooperation among ICT and SSH communities,
- the link to EC funding programmes is success key factor,
- it is important the link with societal needs and expected impact,
- the tool is unclear and the focus must be clarified.

Question 2: Potential problems/limitations in use

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- The list can be outdated very quickly	-
- Who is making/supervising the list? It depends on the expert	-
- Also, it should include technologies in general (e.g. ICT in fields where nobody speaks of ICT, biotechnology, etc.)	-
- It should/can be about risk management	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Mind-set of ICT experts doesn't guarantee the success of the process	-
- How to shift SSH studies to society	-
- Challenge of SSH in big data	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- This matrix can potentially limit the innovation	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- The matrix needs to be updated	-

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Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Flaws in the way the societal challenges are being identified	-
- Too much lobbyism in the H2020 programme. The info of the societal challenges builds on this. More people/organizations should be involved in defining the programme. We need more SSH projects in the programme --> more money	-
- Keep conflicts of interests in mind in this resource too! It has to be a fair discussion	-
- It is unclear what the resource will actually provide	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Difficult to discuss without having seen the matrix	-
- Include also other resources to that, it is not a single checklist	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- The list does not include societal challenges: power, privacy, safety, ethics	The list of topics from the commission (http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=48031) proposes an ICT perspective and it does not include the societal point of view. This is necessary. Challenges related to privacy and security, challenges related to the opportunity to provide services in sparsely populated areas (for example medical services). This aspect is also related to the opportunity to overcome inequalities related to some specific territorial features
- SSH and RRI are not concluded	-
- Security aspect should be addressed/stressed	Between the topics addressed, security, democracy, etc.
- Listing is the first step, SWOT analysis would be good	-

Classification of the suggestions from the seven working tables: <u>Limitations in the use</u>

Very low	Low	Medium	High
	- The list can be outdated very quickly	- Mind-set of ICT experts doesn't guarantee the success of the process	- Too much lobbyism in the H2020 programme. The info of the societal challenges builds on this. More people/organizations should be involved in defining the programme. We need more SSH projects in the programme --> more money
	- Who is making/supervising the list? It depends on the expert	- How to shift SSH studies to society	- SSH and RRI are not concluded
	- Also, it should include technologies in general (e.g. ICT in fields where nobody speaks of ICT, biotechnology, etc.)	- Challenge of SSH in big data	
	- It should/can be about risk management	- This matrix can potentially limit the innovation	

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	- Flaws in the way the societal challenges are being identified	- Keep conflicts of interests in mind in this resource too! It has to be a fair discussion	
	- It is unclear what the resource will actually provide		
	- Difficult to discuss without having seen the matrix		
	- Include also other resources to that, it is not a single checklist		
	- The list does not include societal challenges: power, privacy, safety, ethics		
	- Security aspect should be addressed/stressed		
	- Listing is the first step, SWOT analysis would be good		
0	**11**	**5**	**2**

Analysis of the suggestions

Positive versus negative
- 11 suggestions address very low or low limitations in the use.
- 7 suggestions address medium and high limitation.

List of the limitations
- Problems in maintaining the tool.
- The tool is unclear and the focus must be clarified.
- It is important the link with societal needs and expected impact.
- The need to introduce a better cooperation among ICT and SSH communities.

Question 3: How to use/How to improve/Suggested content and functionalities

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Users: for people making/designing calls	-
- They should not be ICT challenges. They should be "human" challenges, human/technology interactions. ICT is a tool, an enabler	-
- USER FOCUS: to target higher level call designers. Connect with risk-management as part of research/projects	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Matching on any other type of events	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- To have a matrix you need to have dimensions, if not it is not a matrix	-

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- It could be composed and aligned with EU funding areas, provide information on the state-of-the-art solutions in these areas	-
- Map interdisciplinary methods to be used to solve key challenges	-
- Make a matrix into a reverse tool --> DISCUSS	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Need to add explanation for SSH involvement (scope). It is not always obvious	-
- Add links to cases or contacts	-
- Should be linked to the HubIT community	-
- Can be used as a mapping hub/portal for more info: contacts, projects, experiences, papers	-
- Upload users' experiences	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- The link with the assessment tool should be clarified	-
- Scientific support from the European Commission is needed in the process of carrying out a research project	-
- Be more focused on the type of stakeholders we involve in the process/project	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Connect to the future EU Horizon programme	-
- Mix the matrix with the repository	-
- Define the target group of it	-
- Update regularly the big challenges in the matrix and review relevance	-
- Define the geographical focus (EU + associated?)	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Few main topics	Main topics could be a restricted set that can be organized in subtopics. The main topics should consider democracy, transparency, safety (privacy)…etc.
- Invite people to discuss their own problems, what are the challenges (Better thousand flowers than one)	It is important to invite people to discuss in order to enrich and evolve challenges and decide what are the most important ones.
- local vs national level	It is also important to take into account the spatial scale of the challenges.
- headline + explanation	The list can be better if it will be organised as headline with a link containing a short explanation and not as a long text.

Classification of the suggestions from the seven working tables: <u>Improvement / how to use (difficulty of implementation)</u>

Very low	Low	Medium	High
- Add links to cases or contacts	- Matching on any other type of events	- Users: for people making/designing calls	- Make a matrix into a reverse tool --> DISCUSS

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- Should be linked to the HubIT community	- To have a matrix you need to have dimensions, if not it is not a matrix	- They should not be ICT challenges. They should be "human" challenges, human/technology interactions. ICT is a tool, an enabler	
- Connect to the future EU Horizon programme	- It could be composed and aligned with EU funding areas, provide information on the state-of-the-art solutions in these areas	- USER FOCUS: to target higher level call designers. Connect with risk-management as part of research/projects	
- Define the target group of it	- Can be used as a mapping hub/portal for more info: contacts, projects, experiences, papers	- Map interdisciplinary methods to be used to solve key challenges	
- Define the geographical focus (EU + associated?)	- Be more focused on the type of stakeholders we involve in the process/project	- Need to add explanation for SSH involvement (scope). It is not always obvious	
- Few main topics	- Mix the matrix with the repository	- Upload users' experiences	
- headline + explanation	- Update regularly the big challenges in the matrix and review relevance	- The link with the assessment tool should be clarified	
	- Invite people to discuss their own problems, what are the challenges (Better thousand flowers than one)	- Scientific support from the European Commission is needed in the process of carrying out a research project	
	- local vs national level		
7	**9**	**8**	**1**

Analysis of the suggestions

Internal versus external factors

- 16 suggestions of improvements mainly related to factors internal to the project.
- 9 suggestions of improvements mainly related to factors external to the project, but on 8 of them the project could have some influence.

CLUSTER	NEEDS	ACTIONS
A - It is necessary to introduce a better cooperation among ICT and SSH communities	- "Challenges in society to be solved by cooperation between ICT/SSH" - The source of the key challenges should be SSH and ICT - The need should come from SSH --> know their expectations - Understanding of each area - not working in silos / source should be mixed - Yes, it is useful when there is an interaction with other entities - The mind-set of ICT experts does not guarantee the success of the process - How to shift SSH studies to society - Challenge of SSH in big data	- Invite people to discuss their own problems, what are the challenges (Better thousand flowers than one) - Users: for people making/designing calls - They (the calls) should not be ICT challenges. They should be "human" challenges, human/technology interactions. ICT is a tool, an enabler - USER FOCUS: to target higher level call designers. Connect with risk-management as part of research/projects - Map interdisciplinary methods to be used to solve key challenges - Need to add explanation for SSH involvement (scope). It is not always obvious - Upload users' experiences

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B - It is relevant a link to EC funding programmes is success key factor,	- Yes, if it will help to get funding - For sure it is useful if you are doing an H2020 project, so you should follow that approach - Yes, it is useful for funding reasons, it is a resource for research	- Connect to the future EU Horizon programme - Define the geographical focus (EU + associated countries) - Matching on any other type of events - It could be composed and aligned with EU funding areas, provide information on the state-of-the-art solutions in these areas - Scientific support from the European Commission is needed in the process of carrying out a research project
C - It is relevant the link with societal needs and expected impact	- Yes, it is useful when the research has an impact or needs input from society (research becomes application) - The list does not include societal challenges: power, privacy, safety, ethics	- Add links to cases or contacts - Should be linked to the HubIT community - local vs national level
D - The tool is unclear and the focus must be clarified	- It is a reasonable approach, but everything written on the list is not possible. Too much work for one project. There was a difference of opinion in the group about this. - Yes, if it is a checklist, matrix - What is the user focus? - NO, as it is not clear what will it do, what will it afford, what it will inform you about - It is unclear what the resource will actually provide - Difficult to discuss without having seen the matrix - Also, it should include technologies in general (e.g. ICT in fields where nobody speaks of ICT, biotechnology, etc.) - It should/can be about risk management - Include also other resources to that, it is not a single checklist - Include also other resources to that, it is not a single checklist - Security aspect should be addressed/stressed - Listing is the first step, SWOT analysis would be good	- Define the target group of it - Few main topics - headline + explanation - To have a matrix you need to have dimensions, if not it is not a matrix - Can be used as a mapping hub/portal for more info: contacts, projects, experiences, papers - Be more focused on the type of stakeholders we involve in the process/project - Mix the matrix with the repository - Update regularly the big challenges in the matrix and review relevance - The link with the assessment tool should be clarified
E -Problems in maintaining the tool	- The list can be outdated very quickly - Who is making/supervising the list? It depends on the expert	- Make a matrix into a reverse tool --> DISCUSS
F – OTHER	- Yes, so not a strong yes according (CF questions listed). - Challenges are also terming the solution - Yes, if you cluster the challenges - This tool seems to step away from the HubIT concept - It is not useful it is just another source of information - No, because it is relevant for every ICT challenge - This matrix can potentially limit the innovation	

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	- Keep conflicts of interests in mind in this resource too! It has to be a fair discussion	
	- Flaws in the way the societal challenges are being identified	

TOOL 3 - Ecosystem mapping

Question 1: Is it perceived as useful by users? Explain why

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Exercise in interpretation	-
- What is the added value (what is there that is not in CORDIS)?	-
- Ecosystem in itself is useful, until you add some qualitative control - where these projects are successful/unsuccessful --> outcomes can be presented and have impact	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Start from people and flow to the projects (Innotube-Prezi)	-
- Functionality that can be offered is important	-
- Promote the SSH/ICT dimensions as an added-value	-
- Actors can operate on both sectors (brokers)	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, for 3 reasons: networking, reporting, and research	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, it shows reality	-
- Yes, it shows different ideas	-
- Yes, as source of information (assist community/network contacts)	-
- Yes, it is useful to identify actors and their relations	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- In general, the experts are not sure whether they will use it.	-
- Yes, but the ecosystem (only) maps actors already involved in projects, i.e. part of the network. What about externals/newcomers?	-
- Yes, a resource to get insights into what is already being done in the field (SSH/ICT projects) get an idea about state of the art.	-
- Yes, it is useful to the EC.	-
- Yes, if I want to find a (female) university coordinator, so I can use a call	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**

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- Yes, but when thinking on results considers also concepts --> categorization	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, I would use it, but not all the information is needed. Background and purposes of the research	-
- It is difficult to evaluate if it is useful, if we do not have a clear purpose	-
- It is useful for the policy makers (gender, under-represented countries)	-

Classification of the suggestions from the seven working tables: <u>Usefulness</u>

YES	YES, BUT....	NO, BUT....	NO
- Functionality that can be offered is important	- Ecosystem in itself is useful, until you add some qualitative control - where these projects are successful/unsuccessful --> outcomes can be presented and have impact	- Exercise in interpretation	
- Yes, for 3 reasons: networking, reporting, and research	- Start from people and flow to the projects (Innotube-Prezi)	- What is the added value (what is there that is not in CORDIS)?	
- Yes, it shows reality	- Promote the SSH/ICT dimensions as an added-value	- It is difficult to evaluate if it is useful, if we do not have a clear purpose	
- Yes, it shows different ideas	- Actors can operate on both sectors (brokers)		
- Yes, as source of information (assist community/network contacts)	- In general, the experts are not sure whether they will use it.		
- Yes, it is useful to identify actors and their relations	- Yes, but the ecosystem (only) maps actors already involved in projects, i.e. part of the network. What about externals/newcomers?		
	- Yes, a resource to get insights into what is already being done in the field (SSH/ICT projects) get an idea about state of the art.		
	- Yes, it is useful to the EC.		
	- Yes, if I want to find a (female) university coordinator, so I can use a call		
	- Yes, but when thinking on results considers also concepts --> categorization		
	- Yes, I would use it, but not all the information is needed. Background and purposes of the research.		
	- It is useful for the policy makers (gender, under-represented countries)		
6	**12**	**3**	**0**

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Analysis of the suggestions

Positive versus negative
- 18 suggestions to maintain the tool but 14 of them point out criticalities in the elaboration of the tool and suggest modifications aiming to obtain an improvement.
- 3 suggestions to delete the tool, all the 3 suggestions point out the criticalities that must be removed to maintain the tool.

List of the criticalities
The main criticalities concern:
- the usefulness is put in relationship to EC programmes, for the activities related to the presentation of proposals like for searching partners and projects and for the objectives of policy makers
- the ecosystem has to foster a better promotion of SSH/ICT dimensions as an added value
- it is important to introduce a categorisation and background and purposes of the research are relevant information
- the tool is unclear and the added value must be clarified

Question 2: Potential problems/limitations in use

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Dividing into rigid categories might be misleading	-
- Be careful with some categories, e.g. business or open access - this is actually a requirement	-
- National initiatives are too much	-
- The data is self-reported - showed view / putting keywords without the content	-
- Accuracy	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Create critical mass	-
- Advertorial	-
- Create reputation	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Is the word "ecosystem" not promising too much?	-
- It will not cover all ecosystem. So maybe it is "main actors"?	-
- How do you classify that the project is RRI related - is it sufficient to cover one dimension (e.g. open access)? But open data is a requirement for EU funding so it becomes questionable	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Closed data	-
- Are the contacts still there?	-
- It needs to be constantly updated for organisation contacts, etc.	-

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- Endorsement / quality of contacts?	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Right now, it seems like this resource is more of a help to the HubIT consortium than to outsides. Is this resource really answering a need?	-
- Who is in and who is out of the ecosystem? Who decides this?	-
- Data protection: how does the system deal with this?	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- It seems to be too ambitious	-
- Privacy concern regarding contacts --> GDPR?!	-
- Visualization to be made user-friendly	-
- Interactivity of resources	-
- Resources being added shall be validated before publication (especially people but also institutions)	-
- Does it foresee to attract newcomers to EU programmes?	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- There are only present projects - existing projects.	-
- Can I trust the people who I invite to the project, some people never collaborate with strangers (as if you are the coordinator you have a lot of responsibility)	-

Classification of the suggestions from the seven working tables: <u>Limitations in the use</u>

Very low	Low	Medium	High
	- Dividing into rigid categories might be misleading	- National initiatives are too much	
	- Be careful with some categories, e.g. business or open access - this is actually a requirement	- Create critical mass	
	- The data is self-reported - showed view / putting keywords without the content	- Advertorial	
	- Accuracy	- Is the word "ecosystem" not promising too much?	
	- Create reputation	- It will not cover all ecosystem. So maybe it is "main actors"?	
	- How do you classify that the project is RRI related - is it sufficient to cover one dimension (e.g. open access)? But open data is a requirement for EU funding so it becomes questionable	- It needs to be constantly updated for organisation contacts, etc.	
	- Closed data	- Endorsement / quality of contacts?	

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	- Are the contacts still there?	- Right now, it seems like this resource is more of a help to the HubIT consortium than to outsides. Is this resource really answering a need?	
	- Who is in and who is out of the ecosystem? Who decides this?	- It seems to be too ambitious	
	- Data protection: how does the system deal with this?		
	- Privacy concern regarding contacts --> GDPR?!		
	- Visualization to be made user-friendly		
	- Interactivity of resources		
	Resources being added shall be validated before publication (especially people but also institutions)		
	- Does it foresee to attract newcomers to EU programmes?		
	- There are only present projects - existing projects.		
	- Can I trust the people who I invite to the project, some people never collaborate with strangers (as if you are the coordinator you have a lot of responsibility)		
0	**17**	**9**	**0**

Positive versus negative

- 17 suggestions address very low or low limitations in the use.
- 9 suggestions address medium and high limitation.

List of the limitations

- the usefulness is put in relationship to EC programmes, for the activities related to the presentation of proposals like for searching partners and projects and for the objectives of policy makers
- the ecosystem has to foster a better promotion of SSH/ICT dimensions as an added value
- it is important to introduce a categorization and background and purposes of the research are relevant information
- the tool is unclear and the added value must be clarified

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Question 3: How to use/How to improve/Suggested content and functionalities

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Figure out the trends (e.g. keywords, understanding of RRI)	-
- Create and engage in a community, instead of just	-
- Do it in a direct connection with reality mapping	-
- Study some successful areas of ecosystem and draw conclusions --> description of the archetype of successful innovation	-
- To see where the project went wrong	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Use of videos to promote the use of SSH/RRI in ICT as an added-value	-
- Storytelling approach about the results of the ecosystem mapping	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Make it possible for projects/actors to "include themselves" into this database	-
- Expand the database outside the EU funded projects and geography (Asia, Africa, USA), funding institution (if other than EU)	-
- Additional demographic variables (ethnicity, seniority, research level), relevant experience (years in the field), information on funding and co-funding (own resources)	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Actors - people -list projects	-
- National Contact Point (NCP) lists should be involved	-
- External experts (volunteers) should be used (portfolio of helpers)	-
- Map the budget of SSH activities within projects	-
- Recommendation for the commission to identify percentage of activities (SSH)	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- What is the difference between the ecosystem and the virtual matching catalogue? Make this clear!	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Be able to update profile and add items	-
- Define the primary target group and define based on that what categories shall be included	-
- The tools shall form a Platform - interactivity between resources	-

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- Add the tools of HubIT to the proposal preparation system and guide of the EC	-
- Utilization of the results in education: 1) Example for a similar useful tool: Ramon's tool, SISNET Matchmaking tool 2) Extend to other programmes the mapping (e.g. Erasmus+)	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- It would be good to know who are the private partners	-
- Rather a market place than creating links	-
- Including also project proposals	-
- More information about the coordinators would be useful, but at the moment this info is not public	-
- Ability to integrate SSH and ICT. How has the social process impacted the process of project "writing", after mapping we should go in depth. --> Research that goes in parallel, you use the insights from both ICT and SSH	-

Classification of the suggestions from the seven working tables: <u>Improvement / how to use (difficulty of implementation)</u>

Very low	Low	Medium	High
- Use of videos to promote the use of SSH/RRI in ICT as an added-value	- Create and engage in a community, instead of just	- Figure out the trends (e.g. keywords, understanding of RRI)	
- Make it possible for projects/actors to "include themselves" into this database	- Study some successful areas of ecosystem and draw conclusions --> description of the archetype of successful innovation	- Do it in a direct connection with reality mapping	
- Expand the database outside the EU funded projects and geography (Asia, Africa, USA), funding institution (if other than EU)	- To see where the project went wrong	- National Contact Point (NCP) lists should be involved	
- Actors - people -list projects	- Storytelling approach about the results of the ecosystem mapping	- Recommendation for the commission to identify percentage of activities (SSH)	
- Map the budget of SSH activities within projects	- Additional demographic variables (ethnicity, seniority, research level), relevant experience (years in the field), information on funding and co-funding (own resources)	- The tools shall form a Platform - interactivity between resources	
- What is the difference between the ecosystem and the virtual matching catalogue? Make this clear!	- External experts (volunteers) should be used (portfolio of helpers)	- Add the tools of HubIT to the proposal preparation system and guide of the EC	
- It would be good to know who are the private partners	- Be able to update profile and add items	- Utilization of the results in education: 1) Example for a similar useful tool: Ramon's tool, SISNET Matchmaking tool 2) Extend to other programmes the mapping (e.g. Erasmus+)	

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- Including also project proposals		- Rather a market place than creating links	
- More information about the coordinators would be useful, but at the moment this info is not public		- Ability to integrate SSH and ICT. How has the social process impacted the process of project "writing", after mapping we should go in depth. --> Research that goes in parallel, you use the insights from both ICT and SSH	
9	**7**	**9**	**0**

Analysis of the suggestions

Internal versus external factors

- 16 suggestions of improvements mainly related to factors internal to the project.
- 9 suggestions of improvements mainly related to factors external to the project, but on all of them the project could have some influence.

CLUSTER	NEEDS	ACTIONS
A - The usefulness is put in relationship to EC programmes, for the activities related to the presentation of proposals like for searching partners and projects and for the objectives of policy makers	- Ecosystem in itself is useful, until you add some qualitative control - where these projects are successful/unsuccessful --> outcomes can be presented and have impact - Start from people and flow to the projects (Innotube-Prezi) - Yes, but the ecosystem (only) maps actors already involved in projects, i.e. part of the network. What about externals/newcomers? - Yes, a resource to get insights into what is already being done in the field (SSH/ICT projects) get an idea about state of the art. - Yes, it is useful to the EC. - Yes, if I want to find a (female) university coordinator, so I can use a call - Yes, but when thinking on results considers also concepts --> categorization - Does it foresee to attract newcomers to EU programmes?	- Make it possible for projects/actors to "include themselves" into this database - Expand the database outside the EU funded projects and geography (Asia, Africa, USA), funding institution (if other than EU) - Actors - people -list projects - Map the budget of SSH activities within projects - Including also project proposals - More information about the coordinators would be useful, but at the moment this info is not public - To see where the project went wrong - Recommendation for the commission to identify percentage of activities (SSH) - Add the tools of HubIT to the proposal preparation system and guide of the EC - Utilization of the results in education: 1) Example for a similar useful tool: Ramon's tool, SISNET Matchmaking tool 2) Extend to other programmes the mapping (e.g. Erasmus+) - Rather a market place than creating links
B - The ecosystem has to foster a better promotion of SSH/ICT dimensions as an added value	- Promote the SSH/ICT dimensions as an added-value - Actors can operate on both sectors (brokers) - Create critical mass - Advertorial - Is the word "ecosystem" not promising too much?	- Use of videos to promote the use of SSH/RRI in ICT as an added-value - Create and engage in a community, instead of just - Study some successful areas of ecosystem and draw conclusions --> description of the archetype of successful innovation - Storytelling approach about the results of the ecosystem mapping

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	- It will not cover all ecosystem. So maybe it is "main actors"? - It needs to be constantly updated for organization contacts, etc.	- External experts (volunteers) should be used (portfolio of helpers) - Be able to update profile and add items - NCP (National Contact Points) lists should be involved - Ability to integrate SSH and ICT. How has the social process impacted the process of project "writing", after mapping we should go in depth. --> Research that goes in parallel, you use the insights from both ICT and SSH
C - It is important to introduce a categorization and background and purposes of the research are relevant information	- Accuracy - Create reputation - How do you classify that the project is RRI related - is it sufficient to cover one dimension (e.g. open access)? But open data is a requirement for EU funding so it becomes questionable - Be careful with some categories, e.g. business or open access - this is actually a requirement - The data is self-reported - showed view / putting keywords without the content - Dividing into rigid categories might be misleading Resources being added shall be validated before publication (especially people but also institutions)	- Additional demographic variables (ethnicity, seniority, research level), relevant experience (years in the field), information on funding and co-funding (own resources) - Figure out the trends (e.g. keywords, understanding of RRI) - Do it in a direct connection with reality mapping
D - The tool is unclear and the added value must be clarified	- What is the added value (what is there that is not in CORDIS)? - It is difficult to evaluate if it is useful, if we do not have a clear purpose - Closed data - Are the contacts still there? - Who is in and who is out of the ecosystem? Who decides this? - Data protection: how does the system deal with this? - Privacy concern regarding contacts --> GDPR?! - Visualization to be made user-friendly - Interactivity of resources - Right now, it seems like this resource is more of a help to the HubIT consortium than to outsides. Is this resource really answering a need? - It seems to be too ambitious	- What is the difference between the ecosystem and the virtual matching catalogue? Make this clear! - It would be good to know who are the private partners - The tools shall form a Platform - interactivity between resources
A - OTHER	- It is useful for the policy makers (gender, under-represented countries) - Exercise in interpretation - National initiatives are too much - Endorsement / quality of contacts?	

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TOOL 4 - Virtual Matching Catalogue

Question 1: Is it perceived as useful by users? Explain why

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- No, the name is bad, because it suggests matching	-
- Maybe "Self-matching community"	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes and no, it is very important to know the topic expertise	-
- Backup the information with documents	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Matching is always useful to find relevant contacts	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, as before (ecosystem mapping)	-
- Yes, it shows reality	-
- Yes, it shows different ideas	-
- Yes, source of information (assist community/network contacts)	-
- Yes, it is useful to identify actors and their relations	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, It is useful for network	-
- Yes, It is useful for online brokerage event	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- No, it is redundant (useful, but the virtual matching catalogue service shall be provided already by the mapping tool)	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, if it is a private professional portal. I would use it if it is a static matching catalogue	-
- Rather no	-
- Rather yes, but it should not be static (right calls, conferences information, networking, shared information in the community)	-

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Classification of the suggestions from the seven working tables: Usefulness

YES	YES, BUT....	NO, BUT....	NO
- Matching is always useful to find relevant contacts	- Maybe "Self-matching community"	- No, the name is bad, because it suggests matching	- Rather no
- Yes, as before (ecosystem mapping)	- Yes and no, it is very important to know the topic expertise	- No, it is redundant (useful, but the virtual matching catalogue service shall be provided already by the mapping tool)	
- Yes, it shows reality	- Backup the information with documents		
- Yes, it shows different ideas	- Yes, if it is a private professional portal. I would use it if it is a static matching catalogue		
- Yes, source of information (assist community/network contacts)	- Rather yes, but it should not be static (right calls, conferences information, networking, shared information in the community)		
- Yes, it is useful to identify actors and their relations			
- Yes, it is useful for network			
- Yes, it is useful for online brokerage event			
8	**5**	**2**	**1**

Analysis of the suggestions

Positive versus negative

- 13 suggestions to maintain the tool and 5 of them point out criticalities in the elaboration of the tool and suggest modifications aiming to obtain an improvement.
- 3 suggestions to delete the tool, 2 suggestions point out the criticalities that must be removed to maintain the tool.

List of the criticalities

The main criticalities concern:
- the usefulness is put in relationship to the networking activities
- it seems part of other tools (mapping tool)
- there are different opinions concerning the characteristics and functionalities to implement in the tool

Question 2: Potential problems/limitations in use

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Isn't there something already existing? Why make more tools to organize the community? People already have similar tools and usual social media	-
- Maybe including some real life SSH element to IT proposals day	-
- Virtual matching is worse than real matching	-
- Why would anyone use it? Even for finding project, we don't need the photo, friends, etc. but rather what projects there are in and if their supervisors are alright. No photo	-

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Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Sustainability after the end of the project	-
- Interaction with LinkedIn groups	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Catalogue will never include everyone: question is who is not there and what is the reason for that. But this is inherent problem for every database	-
- If it will not include big number of members it will not work	-
- Questions of reliability of those in the catalogue	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Quality of contacts? Are they just consultants going for everything?	-
- Contact details/privacy issues in different countries. Public profile with contact details has to be opt in.	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Data protection	

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Are you sure there are no other tools in Europe that allow you to do matchmaking?	-
- Filters: geography, RRI, type of organization	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- ORCID is the first priority	Already exist other tools facilitating virtual matching. For example in research ORCID supports automated linkages between actors sharing their professional activities
- It is time-consuming; it does not help in work. We use ResearchGate	The membership in the different social networks is frequently time consuming and usually, for example when building a partnership for an activity or a project proposal, some actors prefer to use they trusted personal network. Some people use existing tools, such as for example ResearchGate.
- Sustainability - people should use it	The sustainability requires people start to use the functionality and start to share information, and build a critical mass. HUBIT project partners, AB members, participants at the conferences organized in HUBIT: they should be the first set of people engaged.
- I do not want to log-on, information and contact information is ok	It is interesting to share contact information, email. However, I do not want to log on to another Platform.
- There are many networks already	There are many social media, but they are mainly used for different purposes. For example, Facebook is mainly used among friends, Tweeter is necessary for example for companies, as it provides the visibility of the company existence, etc.. It is important to understand where and how data provided are used.

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- It is a problem if it is a social media type tool	Data shared and provided are usually already available on websites (for example the website of the university or the website of the organization). It I not useful to organize the virtual matching catalogue as a social media tool.
- Trusted knowledge is not there	Official available information is a key question and it is provided by funding organization, etc….

Classification of the suggestions from the seven working tables: <u>Limitations in the use</u>

Very low	Low	Medium	High
- Contact details/privacy issues in different countries. Public profile with contact details has to be opt in.	- Interaction with LinkedIn groups	- Isn't there something already existing? Why make more tools to organize the community? People already have similar tools and usual social media	
- Data protection	- Questions of reliability of those in the catalogue	- Maybe including some real life SSH element to IT proposals day	
- Filters: geography, RRI, type of organization	- Quality of contacts? Are they just consultants going for everything?	- Virtual matching is worse than real matching	
- Sustainability - people should use it	- Are you sure there are no other tools in Europe that allow you to do matchmaking?	- Why would anyone use it? Even for finding project, we don't need the photo, friends, etc. but rather what projects there are in and if their supervisors are alright. No photo	
- I do not want to logon, information and contact information is ok	- It is time-consuming; it does not help in work. We use ResearchGate	- Sustainability after the end of the project	
	- It is a problem if it is a social media type tool	- Catalogue will never include everyone: question is who is not there and what is the reason for that. But this is inherent problem for every database	
	- ORCID is the first priority	- If it will not include big number of members it will not work	
		- There are many networks already	
		- Trusted knowledge is not there	
5	**7**	**9**	**2**

<u>Analysis of the suggestions</u>

Positive versus negative

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- 12 suggestions address very low or low limitations in the use.
- 11 suggestions address medium and high limitation.

List of the limitations
The main limitations concern:
- the usefulness is put in relationship to the networking activities
- it seems part of other tools (mapping tool)
- there are different opinions concerning the characteristics and functionalities to implement in the tool

Question 3: How to use/How to improve/Suggested content and functionalities

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Community first, then maybe the catalogue	-
- For example, tailor the catalogue for specific H2020 calls (task-oriented catalogue). Maybe put together challenges	-
- Encourage communication. Promote dialogue	-
- GITHUB is the only resource that is useful in ICT filed --> have the GITHUB page!	GitHub is a development Platform inspired by the way you work. From open source to business, you can host and review code, manage projects, and build software alongside millions of other developers. In the opinion of one of the participants this resource is very useful and should be included in the Virtual Matching Catalogue.
- The only thing the ICT and SSH have in common is the H2020 page --> need to integrate it there to integrate the SSH partners	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Use ResearchGate	ResearchGate is a social networking site for scientists and researchers[3] to share papers, ask and answer questions, and find collaborators. The suggestion is to use this resource directly. The question is: ResearchGate addresses in detail the ICT and SSH challenges considering RRI dimensions? Has it the sufficient detail level?
- Suggestions of connections, notifications, advices (automatic) with digest	-
- Create an helpdesk system online	-
- Online speed-dating	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Tool that will allow you to put your project in and catalogue will "extract/download" relevant data directly from CORDIS automatically --> you will not need to fill it in by hand	-
- How this will relate to EU expert database - can they be integrated?	-
- Notifications should be added - if someone new joins the Platform, new idea is added, new actors looking for partner, etc.	-

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- What are the criteria for matching? add categories/filters, filtering system for matching	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Matching system via profile and interests	-
- Recommendation system of contacts (quality) - (linked in eBay etc.)	-
- Need good filters	-
- Geographical location of expert	-
- User can update her/his profile etc. (should be prompted)	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Reach out to social associations and NGOs, so they will use the resource too. Extra effort!	-
- these boxes: assets, skills and previous experience + available as pilots, previous experience with multi-disciplinary projects/collaborations	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Define the real added value of such a tool compared to other already existing tools or the ecosystem mapping resource (discussed before)	Other tools that allow this matching already exist; for instance, the CORDIS network, IDEALIST. It is important to find the differences with them and with respect to the ecosystem mapping.
- Use and connect already existing matchmaking tools (tool of tools) -e.g. SISNET, CORDIS, IDEALIST	Other tools that allow this matching already exist; for instance, SISNET, CORDIS, IDEALIST. It was suggested to connect these tools in HUBIT.
- Make sure that HubIT tools interact --> upgraded mapping tool (interactive)	The other similar tools identified could interact with the HUBIT tool enabling to update the mapping tool interactively.

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- It can have time, should be well organized.	For its use it is important to have a good organization of information matched.
- Sharing the information via journal for Responsible Innovation	-
- If you are a member you get discounts etc. If the content is interesting, the people will join, it depends how you are going to shape it	It is important to avoid that people will receive too much emails on the news in the virtual matching catalogue. A digest could be activated for this purpose.
- It can be about the institutes, conferences, events, not about individuals.	This kind of use helps to improve the use.

Classification of the suggestions from the seven working tables: <u>Improvement / how to use (difficulty of implementation)</u>

Very low	Low	Medium	High
- GITHUB is the only resource that is useful in ICT filed --> have the GITHUB page!	- Community first, then maybe the catalogue	- The only thing the ICT and SSH have in common is the H2020 page --> need to	- Create an helpdesk system online

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		integrate it there to integrate the SSH partners	
- Use ResearchGate	- For example, tailor the catalogue for specific H2020 calls (task-oriented catalogue). Maybe put together challenges	- Suggestions of connections, notifications, advices (automatic) with digest	- Use and connect already existing matchmaking tools (tool of tools) -e.g. SISNET, CORDIS, IDEALIST
- Geographical location of expert	- Encourage communication. Promote dialogue	- Online speed-dating	
- User can update her/his profile etc. (should be prompted)	- How this will relate to EU expert database - can they be integrated?	- Tool that will allow you to put your project in and catalogue will "extract/download" relevant data directly from CORDIS automatically --> you will not need to fill it in by hand	
- It can have time, should be well organized.	- Notifications should be added: if someone new joins the Platform, new idea is added, new actors looking for partner, etc.	- Recommendation system of contacts (quality) - (linked in eBay etc.)	
- It can be about the institutes, conferences, events, not about individuals.	- What are the criteria for matching? add categories/filters, filtering system for matching	- Reach out to social associations and NGOs, so they will use the resource too. Extra effort!	
	- Matching system via profile and interests	- Make sure that HubIT tools interact --> upgraded mapping tool (interactive)	
	- Need good filters	- Sharing the information via journal for Responsible Innovation	
	- These boxes: assets, skills and previous experience + available as pilots, previous experience with multi-disciplinary projects/collaborations	- If you are a member you get discounts etc. If the content is interesting, the people will join, it depends how you are going to shape it	
	- Define the real added value of such a tool compared to other already existing tools or the ecosystem mapping resource (discussed before)		
6	**10**	**9**	**2**

CLUSTER	NEEDS	ACTIONS
A - The usefulness of the tool is put in relationship to the networking activities	- Matching is always useful to find relevant contacts - Yes, as before (ecosystem mapping) - Yes, it shows reality - Yes, it shows different ideas - Yes, source of information (assist community/network contacts) - Yes, it is useful to identify actors and their relations - Yes, it is useful for network - Yes, it is useful for online brokerage event - Interaction with LinkedIn groups	- GITHUB is the only resource that is useful in ICT filed --> have the GITHUB page! - Use ResearchGate - Community first, then maybe the catalogue - Encourage communication. Promote dialogue - The only thing the ICT and SSH have in common is the H2020 page --> need to integrate it there to integrate the SSH partners - Reach out to social associations and NGOs, so they will use the resource too. Extra effort!

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	- Questions of reliability of those in the catalogue	
	- Quality of contacts? Are they just consultants going for everything?	
	- Sustainability - people should use it	
	- Are you sure there are no other tools in Europe that allow you to do matchmaking?	
	- It is time-consuming; it does not help in work. We use ResearchGate	
	- ORCID is the first priority	
	- Isn't there something already existing? Why make more tools to organize the community? People already have similar tools and usual social media	
	- Virtual matching is worse than real matching	
	- Catalogue will never include everyone: question is who is not there and what is the reason for that. But this is inherent problem for every database	
	- If it will not include big number of members it will not work	
	- There are many networks already	
	- Trusted knowledge is not there	
B - The tool seems part of other tools (mapping tool)	- No, it is redundant (useful, but the virtual matching catalogue service shall be provided already by the mapping tool)	- Define the real added value of such a tool compared to other already existing tools or the ecosystem mapping resource (discussed before) - Make sure that HubIT tools interact --> upgraded mapping tool (interactive)
C -There are different opinions concerning the characteristics and functionalities to implement in the tool	- Yes, if it is a private professional portal. I would use it if it is a static matching catalogue	- Geographical location of expert - User can update her/his profile etc. (should be prompted)
	- Rather yes, but it should not be static (right calls, conferences information, networking, shared information in the community)	- It can have time, should be well organized. - It can be about the institutes, conferences, events, not about individuals.
	- Why would anyone use it? Even for finding project, we don't need the photo, friends, etc. but rather what projects there are in and if their supervisors are alright. No photo	- For example, tailor the catalogue for specific H2020 calls (task-oriented catalogue). Maybe put together challenges - How this will relate to EU expert database - can they be integrated?
	- Contact details/privacy issues in different countries. Public profile with contact details has to be opt in.	- Notifications should be added: if someone new joins the Platform, new idea are added, new actors looking for partner, etc. - What are the criteria for matching? add categories/filters, filtering system for matching
	- Data protection	- Matching system via profile and interests
	- Filters: geography, RRI, type of organization	- Need good filters - These boxes: assets, skills and previous experience + available as pilots, previous experience with multi-disciplinary projects/collaborations
	- I do not want to log-on, information and contact information is ok	- Suggestions of connections, notifications, advices (automatic) with digest
	- It is a problem if it is a social media type tool	- Online speed-dating - Tool that will allow you to put your project in and catalogue will "extract/download" relevant data directly from CORDIS automatically --> you will not need to fill it in by hand

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		- Recommendation system of contacts (quality) - (linked in eBay etc.) - Create a helpdesk system online - Use and connect already existing matchmaking tools (tool of tools) -e.g. SISNET, CORDIS, IDEALIST
D - OTHER	- Maybe "Self-matching community"	- Sharing the information via journal for Responsible Innovation - If you are a member you get discounts etc. If the content is interesting, the people will join, it depends how you are going to shape it
	- Yes and no, it is very important to know the topic expertise	
	- Backup the information with documents	
	- No, the name is bad, because it suggests matching	
	- Maybe including some real life SSH element to IT proposals day	
	- Sustainability after the end of the project	

TOOL 5 - Best Practice Repository of RRI in ICT with SSH input

Question 1: Is it perceived as useful by users? Explain why

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, Not best, but "good enough"	-
- Yes, it is useful but in the sense of archetype ecosystem - success examples	-
- Best practices should have an IMPACT	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Define best practice in forms of concept (collaboration, work progress, result)	-
- Take in account that the final result should have a social benefit	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- It will be useful if the evaluation system of it is transparent and ethical	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, if it contains concrete examples	-
- Yes, if it contains inspiring examples. Challenges overcome	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, you can learn from other projects. Build on others' experiences	-

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Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- No, It does not fit to the research agenda	-
- Yes, guidelines and protocols, citizen involvement examples can be useful if you are doing research on a new topic (patient engagement methodology). It can help to develop your own methodology. It helps if you have your own concrete idea and goals	-
- Yes, but I did not realize that before. I am not calling it best practice (asking someone)	-
- Yes, if we would do ICT for SSH we would do some research	-

Classification of the suggestions from the seven working tables: <u>Usefulness</u>

YES	YES, BUT....	NO, BUT....	NO
- Yes, you can learn from other projects. Build on others' experiences	- Yes, Not best, but "good enough"		- No, it does not fit to the research agenda
- Yes	- Yes, it is useful but in the sense of archetype ecosystem - success example		
- Yes, guidelines and protocols, citizen involvement examples can be useful if you are doing research on a new topic (patient engagement methodology). It can help to develop your own methodology. It helps if you have your own concrete idea and goals	Best practices should have an IMPACT		
	- Define best practice in forms of concept (collaboration, work progress, result)		
	- Take into account that the final result should have a social benefit		
	- It will be useful if the evaluation system of it is transparent and ethical		
	- Yes, if it contains concrete examples		
	- Yes, if it contains inspiring examples. Challenges overcome		
	- Yes, but I did not realize that before. I am not calling it best practice (asking someone)		
	- Yes, if we would do ICT for SSH we would do some research		
3	**10**	**0**	**1**

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Analysis of the suggestions

Positive versus negative
- 13 suggestions to maintain the tool and 10 of them point out criticalities in the elaboration of the tool and suggest modifications aiming to obtain an improvement.
- 1 suggestions to delete the tool

List of the criticalities
The main criticalities concern:
- the usefulness is related with the possibility to provide concrete and inspiring examples
- it is relevant to put in evidence impacts and social benefits
- it is relevant to structure the best practices
- the evaluation of the best practices must be transparent and ethical

Question 2: Potential problems/limitations in use

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- What are the criteria?	-
- Several ways: 1) good projects - good practices for maintaining the project; 2) good implementation/RRI dimensions	-
- This repository will be based on a very limited number of projects/cases -->HubIT can investigate deeper selected cases/interviews. The network is here - some experts are ready to share information about their projects	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Separate: process indicator from result indicator	-
- Consider a best practice in forms of innovative approach	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- SSH cannot be conceptualized as "advisors" for ICT - It is a wrong way to do it	-
- "Best practice" is often a very subjective evaluation	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- "Best practice" is overused but may be Ok to use there	-
- "Following one or more principles expressed by the six RRI criteria" --> should be at least 3 principles	-
- Branding problem with "RRI" --> two-word branding (no acronym)	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- It is a very normative resource - normatively kills creativity	-
- "Why should we say that something is better than something else"?	-

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Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- "Initiatives" might result a too wide scope	-
- SSH --> ICT or ICT --> SSH	-
- Integrate into a Platform as appropriate	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- You cannot copy-paste it to every context. It can be an example	-

Classification of the suggestions from the seven working tables: Limitations in the use

Very low	Low	Medium	High
	- This repository will be based on a very limited number of projects/cases -->HubIT can investigate deeper selected cases/interviews. The network is here - some experts are ready to share information about their projects	- What are the criteria?	- It is a very normative resource - normatively kills creativity
	- Separate: process indicator from result indicator	- Several ways: 1) good projects - good practices for maintaining the project; 2) good implementation/RRI dimensions	
	- Consider a best practice in forms of innovative approach	- "Best practice" is often a very subjective evaluation	
	- SSH cannot be conceptualized as "advisors" for ICT - It is a wrong way to do it	- "Best practice" is overused but may be Ok to use there	
	- "Following one or more principles expressed by the six RRI criteria" --> should be at least 3 principles	- "Why should we say that something is better than something else"?	
	- Branding problem with "RRI" --> two-word branding (no acronym)		
	- "Initiatives" might result a too wide scope		
	- SSH --> ICT or ICT --> SSH		
	- Integrate into a Platform as appropriate		
	- You cannot copy-paste it to every context. It can be an example		
0	**10**	**5**	**1**

Analysis of the suggestions

Positive versus negative

- 10 suggestions address very low or low limitations in the use.
- 5 suggestions address medium and high limitation.

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List of the limitations

The main limitations concern:

- the usefulness is related with the possibility to provide concrete and inspiring examples
- it is relevant to put in evidence impacts and social benefits
- it is relevant to structure the best practices
- the evaluation of the best practices must be transparent and ethical

Question 3: How to use/How to improve/Suggested content and functionalities

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- HubIT has to do something to establish the good practice?	-
- May be have a panel of experts to select good practices?	-
- Have to be segmented in 6 RRI dimensions	-
- Define the Principles of good practices, not do just 1-2 (too risky), not too many. Good practices of Human-centred innovation	-
- e.g. ADOPTION - that is a thing which the SSH can help ICT with. Project phases - designing, adoption, uptake - SSH has a big role	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Use an integrated holistic approach	-
- Include classification of Best practices: replicable, etc.	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Rename it to "good" practice and avoid ethical problems with value judgment	-
- Look at involvement of SSH people in project WPs - are they in all/majority or only selective ones	Criteria in the partnerships of projects should introduce the diversity of demographic composition of staff (in a similar way to the gender balance criteria currently considered)
- "examples of successful practices" or "A selection of good practices": could be the name for it not to be moralistic	-
- Testimonials from experts about the project and why it is seen by them as a good practice	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Look at "Catalogue of Promising cases" deliverable (RRI Tools project)	-
- Has to be searchable and able to be customized – filters	-
- Short executive summaries to allow scanning	-
- Possibility to update condition/best practice after physical implementation	-
- Two-word branding (no acronym)	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Create a Wikipedia entry	-
- Use cases	-

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- Best practice examples should be short and simple, like a summary then linking to more resources	-
- Clarify what exactly the "purpose" of the resource is	It is necessary to clarify what Best practices repository will contain, providing a clear definition
- Maybe call it something else than "best practice". For instance: "interesting results" - "previous experiences"	-
- Decide who exactly the target of the resource is. In one resource it is impossible to target all the groups which are mentioned in the workshop material	
- Most important impact: show SMEs how they can benefit from RRI in their work	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Define the way of BP collection	-
- Define well the evaluation criteria for being a BP, e.g. diversity along SSH, geographical context, and replicability. Add criteria "anything else" that was not foreseen	-
- What had you done differently? Success stories, failures to learn from	-
- Explicit and implicit RRI	-
- Instead of being passive and searching for BPs, invite people to propose BPs --> Validation	-
- Use criteria for the BPs	-
- Technalia project: MORRI indicator system to be used for the categorization of BPs	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Criteria for BP: Responsibility; responsiveness, imagination, enhancement. We should use the RRI dimensions	-
- We could look also at the worse practice	-
- What are the bigger questions, do not address individual projects	-
- When did you engage, what was the impact?	One big issue can be engagement for public consultation. One very common problem is that no-one responds to invites for public consultations. Under the category “Public consultation” can be made available some best practices. If someone tests an innovative engagement methodology, it can be a transferable use case that can be an example of best practice. The big question considering the ICT research perspective is: when engaging SSH actors, how SSH influence the approach?
- ICT needs SSH to make ICT applications better	-

Classification of the suggestions from the seven working tables: Improvement / how to use (difficulty of implementation)

Very low	Low	Medium	High
- Have to be segmented in 6 RRI dimensions	- Include classification of Best practices: replicable, etc.	- HubIT has to do something to establish the good practice?	- May be have a panel of experts to select good practices?
- Rename it to "good" practice and avoid ethical	- Has to be searchable and able to be customized – filters	- Define the Principles of good practices, not do just 1-2 (too risky), not too many. Good	- What are the bigger questions, do not address individual projects

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problems with value judgment		practices of Human-centred innovation	
- Look at involvement of SSH people in project WPs - are they in all/majority or only selective ones	- Short executive summaries to allow scanning	- e.g. ADOPTION - that is a thing which the SSH can help ICT with. Project phases - designing, adoption, uptake - SSH has a big role	
- "examples of successful practices" or "A selection of good practices": could be the name for it not to be moralistic	- Possibility to update condition/best practice after physical implementation	- Use an integrated holistic approach	
- Testimonials from experts about the project and why it is seen by them as a good practice	- Two-word branding (no acronym)	- Most important impact: show SMEs how they can benefit from RRI in their work	
- Look at "Catalogue of Promising cases" deliverable (RRI Tools project)	- Create a Wikipedia entry	- Define the way of BP collection	
- Clarify what exactly the "purpose" of the resource is	- Use cases	- Define well the evaluation criteria for being a BP, e.g. diversity along SSH, geographical context, and replicability. Add criteria "anything else" that was not foreseen	
- Maybe call it something else than "best practice". For instance, "interesting results" - "previous experiences"	- Best practice examples should be short and simple, like a summary then linking to more resources	- What had you done differently? Success stories, failures to learn from	
- ICT needs SSH to make ICT applications better	- Decide who exactly the target of the resource is. In one resource it is impossible to target all the groups which are mentioned in the workshop material	- Explicit and implicit RRI	
	- Technalia project: MORRI indicator system to be used for the categorization of BPs	- Instead of being passive and searching for BPs, invite people to propose BPs (automated or competition) --> Validation	
	- We could look also at the worse practice	- Use criteria for the BPs	
		- Criteria for BP: Responsibility; responsiveness, imagination, enhancement. We should use the RRI dimensions	
		- When did you engage, what was the impact?	
2	**7**	**10**	**3**

Need - Action

CLUSTER	NEEDS	ACTIONS
A -The usefulness is related with the possibility to	- Yes, it is useful but in the sense of archetype ecosystem - success example - Yes, if it contains concrete examples	- "examples of successful practices" or "A selection of good practices": could be the name for it not to be moralistic

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provide concrete and inspiring examples	- Yes, if it contains inspiring examples. Challenges overcome	- Testimonials from experts about the project and why it is seen by them as a good practice
	- Yes, you can learn from other projects. Build on others' experiences	- Look at "Catalogue of Promising cases" deliverable (RRI Tools project)
	- Yes, guidelines and protocols, citizen involvement examples can be useful if you are doing research on a new topic (patient engagement methodology). It can help to develop your own methodology. It helps if you have your own concrete idea and goals	- Clarify what exactly the "purpose" of the resource is - Use cases - Best practice examples should be short and simple, like a summary then linking to more resources - Define the Principles of good practices, not do just 1-2 (too risky), not too many. Good practices of Human-centred innovation
	- This repository will be based on a very limited number of projects/cases -->HubIT can investigate deeper selected cases/interviews. The network is here - some experts are ready to share information about their projects	- What had you done differently? Success stories, failures to learn from - May be have a panel of experts to select good practices? - What are the bigger questions, do not address individual projects
	- What are the criteria?	
	- Several ways: 1) good projects - good practices for maintaining the project; 2) good implementation/RRI dimensions	
B - It is relevant to put in evidence impacts and social benefits	- Best practices should have an IMPACT	- e.g. ADOPTION - that is a thing which the SSH can help ICT with. Project phases - designing, adoption, uptake - SSH has a big role - Most important impact: show SMEs how they can benefit from RRI in their work - When did you engage, what was the impact?
	- Take into account that the final result should have a social benefit	
	- Separate: process indicator from result indicator	
C - It is relevant to structure the best practices	- Define best practice in forms of concept (collaboration, work progress, result)	- Have to be segmented in 6 RRI dimensions - Include classification of Best practices: replicable, etc. - Define the way of BP collection
	- Consider a best practice in forms of innovative approach	- Use criteria for the BPs - Criteria for BP: Responsibility; responsiveness, imagination, enhancement. We should use the RRI dimensions
D - The evaluation of the best practices must be transparent and ethical	- It will be useful if the evaluation system of it is transparent and ethical	- Rename it to "good" practice and avoid ethical problems with value judgment - Define well the evaluation criteria for being a BP, e.g. diversity along SSH, geographical context, and replicability. Add criteria "anything else" that was not foreseen
	- "Best practice" is often a very subjective evaluation	
	- "Why should we say that something is better than something else"?	
E - OTHER	- Yes, it is useful but I did not realize that before. I am not calling it best practice (asking someone)	- Look at involvement of SSH people in project WPs - are they in all/majority or only selective ones - Maybe call it something else than "best practice". For instance: "interesting results" - "previous experiences" - ICT needs SSH to make ICT applications better - Has to be searchable and able to be customized – filters - Short executive summaries to allow scanning - Possibility to update condition/best practice after physical implementation - Two-word branding (no acronym) - Create a Wikipedia entry - Decide who exactly the target of the resource is. In one resource it is impossible to target all the groups which are mentioned in the workshop material - Technalia project: MORRI indicator system to be used for the categorization of BPs
	- Yes, if we would do ICT for SSH we would do some research	
	- Yes, Not best, but "good enough"	
	- SSH cannot be conceptualized as "advisors" for ICT - It is a wrong way to do it	
	- "Following one or more principles expressed by the six RRI criteria" --> should be at least 3 principles	
	- Branding problem with "RRI" --> two-word branding (no acronym)	
	- "Initiatives" might result a too wide scope	

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	- SSH --> ICT or ICT --> SSH - Integrate into a Platform as appropriate - You cannot copy-paste it to every context. It can be an example - "Best practice" is overused but may be Ok to use there - It is a very normative resource - normatively kills creativity	- We could look also at the worse practice - HubIT has to do something to establish the good practice? - Use an integrated holistic approach

TOOL 6 - Fact Sheets and Policy Briefs

Question 1: Is it perceived as useful by users? Explain why

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Focus very specifically to DGs (directorate general) (Connect, RTD, Regio, etc.)	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, it is useful to communicate --> share info --> raise awareness --> capture attention --> actionable knowledge, "edible", ready to use	-
- Yes, it is useful to influence/enable action --> need to define targets	-
- Yes, but they should be connected to goals --> usability for Fact Sheets and effectiveness for policy briefs	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
NO suggestions were provided	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, if it can be done	-
- Yes, for 2 pages	-
- No, it will be like defining 'RRI'	-
- No, too complicated	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, for busy people it is a good resource	-
- yes, this is a resource the project can use to target the general public	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**

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- Yes, but define the audiences	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, they are useful for wider public as it changes the perception towards societal challenges	-
- Yes, if the target group are policy makers (administration)	-
- No, if it is a sheet, yes if we use innovative methods for wider public (final result of the group)	-
- EC needs the policy Briefs	-

Classification of the suggestions from the seven working tables: <u>Usefulness</u>

YES	YES, BUT....	NO, BUT....	NO
- Yes, it is useful to communicate --> share info --> raise awareness --> capture attention --> actionable knowledge, "edible", ready to use	- Focus very specifically to DGs (directorate general) (Connect, RTD, Regio, etc.)	- No, it will be like defining 'RRI'	
- Yes, for busy people it is a good resource	- Yes, it is useful to influence/enable action --> need to define targets	- No, too complicated	
- yes, this is a resource the projects can use to target the general public	Yes, but they should be connected to goals --> usability for Fact Sheets and effectiveness for policy briefs		
- Yes, they are useful for wider public as it changes the perception towards societal challenges	- Yes, if it can be done		
- EC needs the policy briefs	- Yes, for 2 pages		
	- Yes, but define the audiences		
	- Yes, if the target group are policy makers (administration)		
	- No, if it is a sheet, yes if we use innovative methods for wider public (final result of the group)		
5	**8**	**2**	**0**

<u>Analysis of the suggestions</u>

Positive versus negative
- 13 suggestions to maintain the tool and 8 of them point out criticalities in the elaboration of the tool and suggest modifications aiming to obtain an improvement.
- 2 suggestions to delete the tool

List of the criticalities
The main criticalities on the usefulness are related to:
- the need to identify specific target groups
- the need to include specific functions

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Question 2: Potential problems/limitations in use

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
No suggestions were provided	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Generic, not tailored	-
- Duplicate/rephrase based on targets/audience	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
No suggestions were provided	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Fact Sheets cannot be one page long and be any good	-
- The target is too broad	-
- The term "Fact Sheets" is not correct and confusing if it talks about results	-
- Do not have too many Policy Briefs	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- A fact sheet does not speak to people's emotions --> it presents an issue in a quantifiable way	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Be precise which kind of stakeholders and what policy --> interaction of ICT and SSH, not RRI (categorization issue)	-
- ICT world is changing fast, take care they are actual (Fact Sheets)	-
- Timing is essential to uptake and integrate information (recommendation)	-
- Change the name of "Policy Briefs" into "Policy discussion papers" (3-4 pages) --> to raise awareness	-
- questions and ask for solutions --> Recommendations providing potential answers (interactive process)	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- If it is a "paper"-based sheet, it is outdated	-

Classification of the suggestions from the seven working tables: <u>Limitations in the use</u>

Very low	Low	Medium	High
	- Generic, not tailored	- The target is too broad	
	- Duplicate/rephrase based on targets/audience	- Do not have too many Policy Briefs	

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	- Fact Sheets cannot be one page long and be any good	- A fact sheet does not speak to people's emotions --> it presents an issue in a quantifiable way	
	- The term "Fact Sheets" is not correct and confusing if it talks about results	- ICT world is changing fast, take care they are actual (Fact Sheets)	
	- Be precise which kind of stakeholders and what policy --> interaction of ICT and SSH, not RRI (categorization issue)	- Timing is essential to uptake and integrate information (recommendation)	
	- Change the name of "Policy Briefs" into "Policy discussion papers" (3-4 pages) --> to raise awareness	- questions and ask for solutions --> Recommendations providing potential answers (interactive process)	
	- If it is a "paper"-based sheet, it is outdated		
0	**7**	**6**	**0**

Analysis of the suggestions

Positive versus negative
- 7 suggestions address very low or low limitations in the use.
- 6 suggestions address medium and high limitation.

List of the limitations
The main limitations concern:
- the need to identify specific target groups
- the need to include specific functions

Question 3: How to use/How to improve/Suggested content and functionalities

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Should be info graphic/narratives	-
- Policy Briefs to politicians (in DGs) and the recommendations are a summary of effort	-
- To make DG Regio implement RRI as a condition	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Policy Briefs should be adjusted to executive summaries, contexts priorities, agendas	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
No suggestions were provided	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**

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- Communication level has to be very good	-
- How about using an info graphic?	-
- Maybe paper or words is not the best way	-
- Be clearer with the way it is presented (cartoons?). More visual and more creative	-
- Policy content has to be very good	-
- Link Policy Briefs with KPIs	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Concise, relevant and present solutions --> the message that we send should respect the plurality of perspectives	-
- Teaser instead of Fact Sheets (rename it)	-
- It does not have to be text, it can be a video or something else	-
- Always keep your target group in mind	-
- Prepare an input for the EC's consultation process	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- 1-1 recommendation document focusing on SSH and ICT stakeholders on how to work together	-
- Fact sheet is the top of an iceberg or only an element, a massive communication campaign needs to be around that	-
- Define the value proposition - selling point	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Innovative tools should be used. Fact sheet can be: video, game (compact game), interactive workshops/meetings, cartoons, open day, broadcast	-

Classification of the suggestions from the seven working tables: <u>Improvement / how to use (difficulty of implementation)</u>

Very low	Low	Medium	High
- Define the value proposition	- Communication level has to be very good	- Should be infographics/narratives	- To make DG Regio implement RRI as a condition
- selling point	- Link Policy Briefs with KPIs	- Policy Briefs to politicians (in DGs) and the recommendations are a summary of effort	- 1-1 recommendation document focusing on SSH and ICT stakeholders on how to work together
	- Teaser instead of Fact Sheets (rename it)	- Policy Briefs should be adjusted to executive summaries, contexts priorities, agendas	- Innovative tools should be used. Fact sheet can be: video, game (compact game), interactive workshops/meetings, cartoons, open day, broadcast
		- How about using an infographic?	
		- Maybe paper or words is not the best way	

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		- Be clearer with the way it is presented (cartoons?). More visual and more creative	
		- Concise, relevant and present solutions --> the message that we send should respect the plurality of perspectives	
		- It does not have to be text, it can be a video or something else	
		- Always keep your target group in mind	
		- Prepare an input for the EC's consultation process	
		- Fact sheet is the top of an iceberg or only an element, a massive communication campaign needs to be around that	
2	**3**	**11**	**3**

CLUSTER	NEEDS	ACTIONS
A - Need to identify specific target groups	- Yes, for busy people it is a good resource	- Policy Briefs to politicians (in DGs) and the recommendations are a summary of effort - Always keep your target group in mind - Prepare an input for the EC's consultation process - To make DG Regio implement RRI as a condition - 1-1 recommendation document focusing on SSH and ICT stakeholders on how to work together
	- yes, this is a resource the projects can use to target the general public	
	- Yes, they are useful for wider public as it changes the perception towards societal challenges	
	- EC needs the Policy Briefs	
	- Focus very specifically to DGs (directorate general) (Connect, RTD, Regio, etc.)	
	- Yes, it is useful to influence/enable action --> need to define targets	
	- Yes, but define the audiences	
	- Yes, if the target group are policy makers (administration)	
	- No, if it is a sheet, yes if we use innovative methods for wider public (final result of the group)	
	- Generic, not tailored	
	- Duplicate/rephrase based on targets/audience	
	- Be precise which kind of stakeholders and what policy --> interaction of ICT and SSH, not RRI (categorization issue)	
	- The target is too broad	
B - Need to include specific functions	- Yes, it is useful to communicate --> share info --> raise awareness --> capture attention --> actionable knowledge, "edible", ready to use	- selling point - Communication level has to be very good - Link Policy Briefs with KPIs - Should be infographics/narratives - Policy Briefs should be adjusted to executive summaries, contexts priorities, agendas - How about using an infographic? - Maybe paper or words is not the best way
	Yes, but they should be connected to goals --> usability for Fact Sheets and effectiveness for Policy Briefs	
	- Yes, if it can be done	

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	- Yes, for 2 pages - Fact Sheets cannot be one page long and be any good - A fact sheet does not speak to people's emotions --> it presents an issue in a quantifiable way - Timing is essential to uptake and integrate information (recommendation) - questions and ask for solutions --> Recommendations providing potential answers (interactive process)	- Be clearer with the way it is presented (cartoons?). More visual and more creative - Concise, relevant and present solutions --> the message that we send should respect the plurality of perspectives - It does not have to be text, it can be a video or something else - Innovative tools should be used. Fact sheet can be: video, game (compact game), interactive workshops/meetings, cartoons, open day, broadcast
A - OTHER	- No, it will be like defining 'RRI' - No, too complicated - The term "Fact Sheets" is not correct and confusing if it talks about results - Change the name of "Policy Briefs" into "Policy discussion papers" (3-4 pages) --> to raise awareness - If it is a "paper"-based sheet, it is outdated - Do not have too many Policy Briefs - ICT world is changing fast, take care they are actual (Fact Sheets)	- Define the value proposition - Teaser instead of Fact Sheets (rename it) - Fact sheet is the top of an iceberg or only an element, a massive communication campaign needs to be around that

TOOL 7 - Policy Recommendations

Question 1: Is it perceived as useful by users? Explain why

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Focus on DG Connect, Regio , RTD, etc.	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, they are comprehensive - provide background and logical connection. They connect to "specialists" --> get their interest	-
- Yes, for timing (release date) --> mechanisms to spot/maximise "political" momentum.	-
- yes, for the smartness --> how much you can leverage	-
- Yes, it helps to identify "allies"/influencers	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Usefulness will depend on how it will be structured	-
- It is useful but not enough to make real impact	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, it is necessary	-

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- Yes, it is normal	-
- Yes, it is like the final paper	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
No suggestions were provided	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
No suggestions were provided	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes	-

Classification of the suggestions from the seven working tables: Usefulness

YES	YES, BUT....	NO, BUT....	NO
- yes, for the smartness --> how much you can leverage	- Focus on DG Connect, Regio, RTD, etc.		
- Yes, it helps to identify "allies"/influencers	- Yes, they are comprehensive - provide background and logical connection. They connect to "specialists" --> get their interest		
- Yes, it is necessary	- Yes, for timing (release date) --> mechanisms to spot/maximize "political" momentum.		
- Yes, it is normal	- Usefulness will depend on how it will be structured		
- Yes, it is like the final paper	- It is useful but not enough to make real impact		
- Yes			
6	**5**	**0**	**0**

Analysis of the suggestions

Positive versus negative

- 11 suggestions to maintain the tool and 5 of them point out criticalities in the elaboration of the tool and suggest modifications aiming to obtain an improvement.
- No suggestions to delete the tool

List of the criticalities

The main criticalities on the usefulness are related to:
- the need to identify specific target groups
- the need to include specific functions

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Question 2: Potential problems/limitations in use

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Problem - solution - use-case	-
- Different cases for different actors. What is the story that the SSH can tell to ICT (but not patronizing)	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Not read	-
- Countries specific	-
- Unnoticed	-
- Promote/prepare the context/warm up well in advance	-
- Framing results (positive/negative) in a way that is deemed useful to change reality, to take action	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Policy Recommendations will be produced at the end of the project - who will make sure they are reflected upon and used?	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Not generic	-
- Not too radical	-
- Not too theoretical	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- It is difficult to reach the policy makers	-
- Start raising awareness about the project. Already now. Workshops are not enough. Knock on doors continuously.	-
- Build trust in order to change opinion	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
No suggestions were provided	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Researchers have to public articles only in peer-reviewed journals, other activities do not count	-

Classification of the suggestions from the seven working tables: Limitations in the use

Very low	Low	Medium	High
	- Problem - solution - use-case	- Different cases for different actors. What is the story that	- It is difficult to reach the policy makers

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		the SSH can tell to ICT (but not patronizing)	
	- Framing results (positive/negative) in a way that is deemed useful to change reality, to take action	- Countries specific	- Start raising awareness about the project. Already now. Workshops are not enough. Knock on doors continuously.
	- Not too radical	- Promote/prepare the context/warm up well in advance	- Build trust in order to change opinion
	- Not too theoretical	- Policy Recommendations will be produced at the end of the project - who will make sure they are reflected upon and used?	- Researchers have to public articles only in peer-reviewed journals, other activities do not count
		- Not generic	
0	**4**	**5**	**4**

Question 3: How to use/How to improve/Suggested content and functionalities

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Should be narrative based	-
- We don't need Fact Sheets, briefs. We need narratives that would argue for SSH's role	-
- specific Policy Recommendations, segmented for different DGs: Connect - uncertainty, future, such issues; Regio - bringing all to higher level	-
- Summary of the Policy Briefs and effort to reach politicians	-
- "Fashionable", keywords for each specific fund, DGs	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
No suggestions were provided	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Promotion part is very important for these recommendations to have impact	-
- Recommendations could be developed through participatory practices, commented, updated	-
- Recommendations could be developed and tailored to the needs of different stakeholders (e.g. policy makers, ICT developers, SSH researchers, etc.), using different "languages"	-
- Structure and dissemination is crucial	-
- Media training to SSH researchers?	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Need to propose the instruments to implement the recommendations	-
- They have to be feasible recommendations	-

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- Possibly tailored to the audience	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Highlight the trade-offs	-
- It is not enough to write about “what" should be changed - also write about "how".	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
No suggestions were provided	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Go to people and communicate it	-
- Invite the policy makers to an event (bottom up - for example invite René von Schomberg from EC)	-
- Website	-

Classification of the suggestions from the seven working tables: <u>Improvement / how to use (difficulty of implementation)</u>

Very low	Low	Medium	High
	- "Fashionable", keywords for each specific fund, DGs	- Should be narrative based	- Need to propose the instruments to implement the recommendations
	- Recommendations could be developed through participatory practices, commented, updated	- We don't need Fact Sheets, briefs. We need narratives that would argue for SSH's role	Go to people and communicate it
	- Recommendations could be developed and tailored to the needs of different stakeholders (e.g. policy makers, ICT developers, SSH researchers, etc.), using different "languages"	- specific Policy Recommendations, segmented for different DGs: Connect - uncertainty, future, such issues; Regio - bringing all to higher level	
	- Structure and dissemination is crucial	- Summary of the Policy Briefs and effort to reach politicians	
	- Media training to SSH researchers?	- Promotion part is very important for these recommendations to have impact	
		- They have to be feasible recommendations	
		- Possibly tailored to the audience	
		- Highlight the trade-offs	
		- It is not enough to write about “what" should be changed - also write about "how".	
		- Invite the policy makers to an event (bottom up - for	

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		example invite René von Schomberg from EC)	
		- Website	
0	**5**	**11**	**1**

CLUSTER	NEEDS	ACTIONS
A - Needto identify specific target groups	- Focus on DG Connect, Regio , RTD, etc. - Yes, it helps to identify "allies"/influencers - Different cases for different actors. What is the story that the SSH can tell to ICT (but not patronizing) - Not generic - It is difficult to reach the policy makers	- "Fashionable", keywords for each specific fund, DGs - Recommendations could be developed and tailored to the needs of different stakeholders (e.g. policy makers, ICT developers, SSH researchers, etc.), using different "languages" - specific Policy Recommendations, segmented for different DGs: Connect - uncertainty, future, such issues; Regio - bringing all to higher level - Summary of the Policy Briefs and effort to reach politicians - Possibly tailored to the audience - Invite the policy makers to an event (bottom up - for example invite René von Schomberg from EC)
B - Needto include specific functions	- Yes, they are comprehensive - provide background and logical connection. They connect to "specialists" --> get their interest - Yes, for timing (release date) --> mechanisms to spot/maximise "political" momentum. - Usefulness will depend on how it will be structured - Problem - solution - use-case - Framing results (positive/negative) in a way that is deemed useful to change reality, to take action - Not too radical - Not too theoretical - Countries specific - Promote/prepare the context/warm up well in advance	- Structure and dissemination is crucial - Media training to SSH researchers? - Should be narrative based - We don't need Fact Sheets, briefs. We need narratives that would argue for SSH's role - Highlight the trade-offs - It is not enough to write about “what" should be changed - also write about "how". - Website - Need to propose the instruments to implement the recommendations
A - OTHER	- It is useful but not enough to make real impact - yes, for the smartness --> how much you can leverage - Policy Recommendations will be produced at the end of the project - who will make sure they are reflected upon and used? - Start raising awareness about the project. Already now. Workshops are not enough. Knock on doors continuously. - Build trust in order to change opinion - Researchers have to public articles only in peer-reviewed journals, other activities do not count	- Recommendations could be developed through participatory practices, commented, updated - Promotion part is very important for these recommendations to have impact - They have to be feasible recommendations Go to people and communicate it

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TOOL 8 - Guidelines for responsible ICT Research and Innovation informed by SSH

Question 1: Is it perceived as useful by users? Explain why

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, the target group is everyone, who are already in the field, who are not --> citizens in general	-
- people are the target, but communication (C) is missing. But not patronizing	-
- Pitch SSH to ICT? What is the added value to ICT? No separate guidelines for different types of ICT	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, but avoid more burden for including SSH	-
- Not to be taken so far on the inclusion of SSH	-
- These are simple things that could be implemented	-
- List of checkboxes to evaluate the RRI	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, because there still is no precise guidelines for ICT, on how to do RRI (except for generic principles to follow)	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, it is useless unless you give examples	-
- Yes, to find good criteria and indicators	-
- Yes, to provide examples	-
- Yes, because people need to be linked to the solution	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, they are useful for researchers, but policy makers will not use them	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, connection among ecosystem mapping, best practices and guidelines	

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- No/Yes. Guidelines do not fit to SSH-RRI. It is difficult to decide (ICT answer)	-

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- Yes, it depends on the stage of development, suggesting methodology. Different stages, different methodologies, but it can be circular, it is not linear	-
- Yes, there cannot be 1 guideline, it depends on the topic. Advise can be useful + good inspiring examples for private industry	-

Classification of the suggestions from the seven working tables: <u>Usefulness</u>

YES	YES, BUT....	NO, BUT....	NO
- Yes, the target group is everyone, who are already in the field, who are not --> citizens in general	- people are the target, but communication (C) is missing. But not patronizing		
- Yes, to find good criteria and indicators	- Pitch SSH to ICT? What is the added value to ICT? No separate guidelines for different types of ICT		
- Yes, to provide examples	- Yes, but avoid more burden for including SSH		
- Yes, because people need to be linked to the solution	- Not to be taken so far on the inclusion of SSH		
- Yes, connection among ecosystem mapping, best practices and guidelines	- These are simple things that could be implemented		
	- List of checkboxes to evaluate the RRI		
	- Yes, because there still is no precise guidelines for ICT, on how to do RRI (except for generic principles to follow)		
	- Yes, it is useless unless you give examples		
	- No/Yes. Guidelines do not fit to SSH-RRI. It is difficult to decide (ICT answer)		
	- Yes, it depends on the stage of development, suggesting methodology. Different stages, different methodologies, but it can be circular, it is not linear		
	- Yes, there cannot be 1 guideline, it depends on the topic. Advise can be useful + good inspiring examples for private industry		
5	**11**	**0**	**0**

<u>Analysis of the suggestions</u>

Positive versus negative

- 16 suggestions to maintain the tool and 11 of them point out criticalities in the elaboration of the tool and suggest modifications aiming to obtain an improvement.
- No suggestions to delete the tool

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List of the criticalities

The main criticalities on the usefulness are related to:
- the need to understand better the role of SSH and ICT in defining guidelines
- the need to include specific characteristics in guidelines

Question 2: Potential problems/limitations in use

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- What is the difference between this and good practices?	It is important to understand the difference between Best practices and guidelines
- Maybe there can be an overlap. The usefulness depends on the content of good practices	-
- Good principles?	Are they good in terms of general principles?
- Could become too specific and not scalable	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Do not force the inclusion of SSH	-
- Internalize the concept of RRI	-
- Do not influence the evaluation of proposals based on these guidelines	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
No suggestions were provided	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Be very careful with the term 'RRI' and with how you use it	-
- The issues are not 'RRI', they are the values. RRI is unrelatable	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- General vs. specific guidelines information: finding the right balance, if they are targeting many groups	-
- Trade-offs between relevance and applicability	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- What is your source of information	-
- Define the target group	-
- Check what has already done before to learn from and avoid double work (ex. Deliverable 1.3 RRI tools project)	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- People disagree on the RRI criteria	-
- In medical sector, the issues are very complicated, when in one country the situation can be very complex	-

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Classification of the suggestions from the seven working tables: Limitations in the use

Very low	Low	Medium	High
	- What is the difference between this and good practices?	- Could become too specific and not scalable	- People disagree on the RRI criteria
	- Maybe there can be an overlap. The usefulness depends on the content of good practices	- Do not influence the evaluation of proposals based on these guidelines	- In medical sector, the issues are very complicated, when in one country the situation can be very complex
	- Good principles?	- Be very careful with the term 'RRI' and with how you use it	
	- Do not force the inclusion of SSH	- The issues are not 'RRI', they are the values. RRI is unrelatable	
	- Internalize the concept of RRI	- What is your source of information	
	- General vs. specific guidelines information: finding the right balance, if they are targeting many groups		
	- Trade-offs between relevance and applicability		
	- Define the target group		
	- Check what has already done before to learn from and avoid double work (ex. Deliverable 1.3 RRI tools project)		
0	**9**	**5**	**2**

Analysis of the suggestions

Positive versus negative

- 9 suggestions address very low or low limitations in the use.
- 7 suggestions address medium and high limitation.

List of the limitations

The main limitations concern:

- the need to understand better the role of SSH and ICT in defining guidelines
- the need to include specific characteristics in guidelines

Question 3: How to use/How to improve/Suggested content and functionalities

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- The guidelines are there to show us what should we do, but we can pick and choose	-
- The good practices are there to show us what has worked	-
- Not users --> beta tester, make people aware that they are contributing --> co creation/open, dynamic	-

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- Should be online as a wiki, so that people can contribute, but layers of verification. Maybe better to speak the same language that people use?	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Use it to facilitate the process of research	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Guidelines should explain what RRI is, what are good practices to implement it in different domains (best/good practices)	-
- Guidelines could be sub-categorized into e.g. what to do when you write a project, when you implement, when project is evaluated, etc.	-
- Not only formally follow the 6 RRI dimensions	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Make it simple with examples	-
- The use of the term 'RRI criteria' is incorrect. 'RRI dimensions' is better	-
- Need to focus on the ICT issues. Case studies	-
- Create our own certification system, e.g. socially responsible badge, gender badge	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Contextual vs. structural barriers	-
- Leave out "examples", they are not guidelines. Keep only "procedures", maybe link them to the best practices	-
- Think about how to disseminate the guidelines in a more "lively way". They should not have to be text	-
- Explain the value of the guidelines	-
- Main difficulties of NGOs/associations with rewards to RRI --> guide them	-
- Maybe useful to link to other projects. There are many guidelines out there (e.g. ENGAGE 2020/ CALLACT)	-
- In the end, when the guidelines are finalized, disseminate to the EC, have them link to the resource in calls/WPs	-
- Focus on collaboration between SSH and ICT ("How to")	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Interlink the above 3 activities	-
- Provide methodologies	-
- Anticipation reflexivity activities	-
- Create guidelines not only based on best practices but also own activities (e.g. hackathons)	-
- Research is interdisciplinary --> guidelines could point out that you really need this expertise	-

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- companies, ICT academics (Use rather this categorization than the one based on SSH blocks): Define well the target groups and the blockages they might have.	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- We should link them to the best practices/lessons learned. Key themes that could be RRI dimension, other layer in different phases, we should link them. Key themes are not linked. Describing different stages + offering methodology	-
- Set of questions render the engagement which people to include. Guidelines are very narrow, can be short	-
- It is a way to direct to other resources	-
- Target: look at the macro-areas EC has defined	-

Classification of the suggestions from the seven working tables: <u>Improvement / how to use (difficulty of implementation)</u>

Very low	Low	Medium	High
- The guidelines are there to show us what should we do, but we can pick and choose	- Guidelines should explain what RRI is, what are good practices to implement it in different domains (best/good practices)	- Not users --> beta tester, make people aware that they are contributing --> co creation/open, dynamic	- Create our own certification system, e.g. socially responsible badge, gender badge
- The good practices are there to show us what has worked	- Not only formally follow the 6 RRI dimensions	- Should be online as a wiki, so that people can contribute, but layers of verification. Maybe better to speak the same language that people use?	
- Use it to facilitate the process of research	- Need to focus on the ICT issues. Case studies	- Contextual vs. structural barriers	
- Guidelines could be sub-categorized into e.g. what to do when you write a project, when you implement, when project is evaluated, etc.	- Explain the value of the guidelines	- Think about how to disseminate the guidelines in a more "lively way". They should not have to be text	
- Make it simple with examples	- In the end, when the guidelines are finalized, disseminate to the EC, have them link to the resource in calls/WPs	- Main difficulties of NGOs/associations with rewards to RRI --> guide them	
- The use of the term 'RRI criteria' is incorrect. 'RRI dimensions' is better	- Create guidelines not only based on best practices but also own activities (e.g. hackathons)	- Maybe useful to link to other projects. There are many guidelines out there (e.g. ENGAGE 2020/ CALLACT)	
- Leave out "examples", they are not guidelines. Keep only "procedures", maybe link them to the best practices	- Set of questions render the engagement which people to include. Guidelines are very narrow, can be short	- Focus on collaboration between SSH and ICT ("How to")	
	- It is a way to direct to other resources	- Interlink the 3 activities: (1- What is your source of information, 2 - Define the target group 3 - Check what has already done before to learn from and avoid double work (ex.	

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		Deliverable 1.3 RRI tools project)	
	- Target: look at the macro-areas EC has defined	- Provide methodologies	
		- Anticipation reflexivity activities	
		- Research is interdisciplinary --> guidelines could point out that you really need this expertise	
		- companies, ICT academics (Use rather this categorization than the one based on SSH blocks): Define well the target groups and the blockages they might have.	
		- We should link them to the best practices/lessons learned. Key themes that could be RRI dimension, other layer in different phases, we should link them. Key themes are not linked. Describing different stages + offering methodology	
7	**9**	**13**	**1**

CLUSTER	NEEDS	ACTIONS
A - Need to understand better the role of SSH and ICT in defining guidelines	- Pitch SSH to ICT? What is the added value to ICT? No separate guidelines for different types of ICT	- Need to focus on the ICT issues. Case studies - Not users --> beta tester, make people aware that they are contributing --> co creation/open, dynamic - Main difficulties of NGOs/associations with rewards to RRI --> guide them - Focus on collaboration between SSH and ICT ("How to") - Research is interdisciplinary --> guidelines could point out that you really need this expertise - companies, ICT academics (Use rather this categorization than the one based on SSH blocks): Define well the target groups and the blockages they might have.
	- Yes, but avoid more burden for including SSH	
	- Not to be taken so far on the inclusion of SSH	
	- Yes, because there still is no precise guidelines for ICT, on how to do RRI (except for generic principles to follow)	
	- No/Yes. Guidelines do not fit to SSH-RRI. It is difficult to decide (ICT answer)	
	- Do not force the inclusion of SSH	
B - Need to include specific characteristics in guidelines)	- Yes, to find good criteria and indicators	- The guidelines are there to show us what should we do, but we can pick and choose - The good practices are there to show us what has worked - Use it to facilitate the process of research - Guidelines could be sub-categorized into e.g. what to do when you write a project, when you implement, when project is evaluated, etc. - Make it simple with examples - Leave out "examples", they are not guidelines. Keep only "procedures", maybe link them to the best practices - Guidelines should explain what RRI is, what are good practices to implement it in different domains (best/good practices) - Not only formally follow the 6 RRI dimensions
	- Yes, to provide examples	
	- Yes, because people need to be linked to the solution	
	- Yes, connection among ecosystem mapping, best practices and guidelines	
	- people are the target, but communication (C) is missing. But not patronizing	
	- List of checkboxes to evaluate the RRI	
	- Yes, it is useless unless you give examples	
	- Yes, it depends on the stage of development, suggesting methodology. Different stages, different	

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	methodologies, but it can be circular, it is not linear	- Explain the value of the guidelines - In the end, when the guidelines are finalized, disseminate to the EC, have them link to the resource in calls/WPs - Create guidelines not only based on best practices but also own activities (e.g. hackathons) - Set of questions renders the engagement which people to include. Guidelines are very narrow, can be short - It is a way to direct to other resources - Should be online as a wiki, so that people can contribute, but layers of verification. Maybe better to speak the same language that people use? - Contextual vs. structural barriers - Think about how to disseminate the guidelines in a more "lively way". They should not have to be text - Maybe useful to link to other projects. There are many guidelines out there (e.g. ENGAGE 2020/ CALLACT) - Interlink the above 3 activities (Tools) - Provide methodologies - Anticipation reflexivity activities - We should link them to the best practices/lessons learned. Key themes that could be RRI dimension, other layer in different phases, we should link them. Key themes are not linked. Describing different stages + offering methodology - Create our own certification system, e.g. socially responsible badge, gender badge
	- Yes, there cannot be 1 guideline, it depends on the topic. Advise can be useful + good inspiring examples for private industry	
	- Maybe there can be an overlap. The usefulness depends on the content of good practices	
	- Good principles?	
	- Internalize the concept of RRI	
	- General vs. specific guidelines information: finding the right balance, if they are targeting many groups	
	- Trade-offs between relevance and applicability	
	- Could become too specific and not scalable	
A - OTHER	- Yes, the target group is everyone, who are already in the field, who are not --> citizens in general	- The use of the term 'RRI criteria' is incorrect. 'RRI dimensions' is better - Target: look at the macro-areas EC has defined
	- These are simple things that could be implemented	
	- What is the difference between this and good practices?	
	- Define the target group	
	- Check what has already done before to learn from and avoid double work (ex. Deliverable 1.3 RRI tools project)	
	- Do not influence the evaluation of proposals based on these guidelines	
	- Be very careful with the term 'RRI' and with how you use it	
	- The issues are not 'RRI', they are the values. RRI is unrelatable	
	- What is your source of information	
	- People disagree on the RRI criteria	
	- In medical sector, the issues are very complicated, when in one country the situation can be very complex	

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TOOL 9 - Tool for assessment of RRI and SSH perspectives in ICT within an organization

Question 1: Is it perceived as useful by users? Explain why

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, if it is an internally imposed evaluation	-
- KPIs can score people away, they feel like enforcement	-
- This is the tool that encourages people to do more	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes and no	-
- Possibility to share and configure the parameters	It is necessary to establish a clear set of parameters to be shared.
- It is dangerous to formally measure the RRI. Not to formalize, not to force. Overdoing it	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, but important is to explain practical use of the assessment. Users need to know why to do it. Useful for example - for review, for external use.	-
- It depends on purpose of assessment	-
- It should provide a structure with questions in order to help people to improve the findings	-
- It should lead you to prepare your own action plan	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, you need to provide some homogeneous criteria	-
- Yes, to give awareness	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, but the description in the text is a bit mixed up	-
- In favour of the online tools	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes	-
- Examples of tools for assessment: -Green impact (environmental impact) UK Universities -Athena SWAN: RRI gender tool (Women in stem) - Global reporting initiatives (GRI) --> guidelines as well - HRS4R tool --> matrix of x indicators to receive a label on resource management -Called! the Interactive edge(UK example) --> EDGE tool assessing public engagement of public Universities	-

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Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Not at all. Could be for companies to include SSH	-
- Yes, for companies	-
- Yes, if you keep it simple (it is difficult)	-
- Yes, if there is a reason why they exist	-

Classification of the suggestions from the seven working tables: <u>Usefulness</u>

YES	YES, BUT....	NO, BUT....	NO
- Yes, you need to provide some homogeneous criteria	- Yes, if it is an internally imposed evaluation	- It is dangerous to formally measure the RRI. Not to formalize, not to force. Overdoing it	
- Yes, to give awareness	- KPIs can score people away, they feel like enforcement	- Not at all. Could be for companies to include SSH	
- In favour of the online tools	- This is the tool that encourages people to do more		
- Yes: Examples of tools for assessment: Green impact (environmental impact) UK Universities Athena SWAN: RRI gender tool (Women in stem) Global reporting initiatives (GRI) --> guidelines as well HRS4R tool --> matrix of x indicators to receive a label on resource management Called! the Interactive edge(UK example) --> EDGE tool assessing public engagement of public Universities	- Yes and no		
- Yes, for companies	- Possibility to share and configure the parameters		
	- Yes, but important is to explain practical use of the assessment. Users need to know why to do it. Useful for example - for review, for external use.		
	- It depends on purpose of assessment		
	- It should provide a structure with questions in order to help people to improve the findings		
	- It should lead you to prepare your own action plan		
	- Yes, but the description in the text is a bit mixed up		
	- Yes, if you keep it simple (it is difficult)		

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	- Yes, if there is a reason why they exist		
5	**12**	**2**	**0**

Analysis of the suggestions

Positive versus negative

- 17 suggestions to maintain the tool and 12 of them point out criticalities in the elaboration of the tool and suggest modifications aiming to obtain an improvement.
- 2 suggestions to delete the tool

List of the criticalities

The main criticalities on the usefulness are related to:
- the need to include specific characteristics in the assessment tool
- the need to better explain the tool

Question 2: Potential problems/limitations in use

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- HubIT is detaching itself from the process and the IT people	-
- Community building	-
- Are we focusing on projects or organizations? Isn't the latter an overreach? The final focus is still EU projects	-
- What is the timing for implementing the tool? Needs to be clarified: what is the focus, the ICT & SSH or EU projects, etc?	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- There is a need to have knowledge on the area	-
- Criteria around criteria that are difficult to assess as dangerous	-
- There is the risk of losing the focus from research to RRI	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Probably it is not sufficient to just assess but also analyse. Importance of practical usage of the assessment --> objective	-
- It should help to develop these ideas further	-
- Suitable for dissemination?	-
- It needs to be clearly useful and user friendly!	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Be careful this does not turn into a 'box ticking' exercise	-
- Lack of standardization	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- It should not be perceived as a judgment of people work. Make the tools more motivational	-
- Why did you fail, you had all the tools??!	-

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Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Specify target group: in our view ICT organizations. Projects with ICT focus	-
- Do not develop only the tool but teach also how to use it --> participate self-assessment tool	-
- Find the most appropriate indicator system to assess the organizations and projects	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Every measurement is quantitative. More people or more materials might not be better. It should be more qualitative	-
- does not may much, does not add value. It is also difficult	-
- Expert assessing --> goals vs result	-
- Online tool will not solve this	-
- The questionnaire is too long, evaluation cannot be more relevant than research	-
- It should be not like research ethics where the content already gets lost	-

Classification of the suggestions from the seven working tables: <u>Limitations in the use</u>

Very low	Low	Medium	High
- Specify target group: in our view ICT organizations. Projects with ICT focus	- Probably it is not sufficient to just assess but also analyse. Importance of practical usage of the assessment --> objective	- HubIT is detaching itself from the process and the IT people	- KPIs terms souk
	- It should help to develop these ideas further	- Community building	- Criteria around criteria that are difficult to assess as dangerous
	- Suitable for dissemination?	- Are we focusing on projects or organizations? Isn't the latter an overreach? The final focus is still EU projects	- Lack of standardization
	- It needs to be clearly useful and user friendly!	- What is the timing for implementing the tool? Needs to be clarified: what is the focus, the ICT & SSH or EU projects, etc?	- does not may much, does not add value. It is also difficult
	- It should not be perceived as a judgment of people's work. Make the tools more motivational	- There is a need to have knowledge on the area	- Online tool will not solve this
	- Do not develop only the tool but teach also how to use it --> participate self-assessment tool	- There is the risk of losing the focus from research to RRI	- It should be not like research ethics where the content already gets lost
	- Find the most appropriate indicator system to assess the organizations and projects	- Be careful this does not turn into a 'box ticking' exercise	
	- Every measurement is quantitative. More people or more materials might not be	- Why did you fail, you had all the tools??!	

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	better. It should be more qualitative		
	- Expert assessing --> goals vs result	- The questionnaire is too long, evaluation cannot be more relevant than research	
1	**9**	**9**	**6**

Analysis of the suggestions

Positive versus negative

- 10 suggestions address very low or low limitations in the use.
- 16 suggestions address medium and high limitation.

List of the limitations

The main limitations concern:

- the need to include specific characteristics in the assessment tool
- the need to better explain the tool

Question 3: How to use/How to improve/Suggested content and functionalities

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Needs to be personalized	-
- Focus on the priorities of the project/organization and then every user should personalize for the concrete project/organization	-
- Make sure the terminology is correct. Project unity idea --> is HubIT for ICT/SSH actors or EU research projects?	Clarifying if the focus is the ICT & SSH or EU projects, etc.

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- It should be clear	-
- Not assess <--> raise awareness	The concept of responsibility for research should not be forced. Awareness should be assessed.
- Enlarging the RRI	-
- There should be awareness that assess could be a difficult task and dangerous	Awareness and assessment is extremely hard. A tool for assessment requires a formalization that can be very dangerous, as it requires a formalization sometimes based on impressions (as it is difficult to assess).
- Create minimum standards for irresponsibility/responsibility	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- It should be a set of questions. More questions = better	-
- Optimal: 3-4 questions/dimensions	-
- At least 1 open question	-
- a filtering option --> to adapt it according to the needs	-
- Different questions by type of evaluator	-
- It is up to each user to select areas of evaluation. It should not be a fixed tool/structure	-
- flexibility is important	-

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- Better is to use self-reflection instead of self-assessment	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Use ICT language	-
- More interaction in the indicators	-
- Should be a voluntary exercise	-
- This should be moved towards being more standardized (work with commission)	-
- Integration with SME assessment tools	-
- Should build upon one project tools that has already been developed	-
- Include artificial intelligence and emerging technologies	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Make the tools more participatory. For instance a one-day self-assessment. Include a visionary element where do we want to be in x months	-
- Suggest corrective actions (such as link to other resources in the framework model)	-
- Invite external moderators to take part in the (self) assessment exercise (for advices)	-
- The focus should be on the team and the end of result you want to achieve. based on this you design the tools (See picture for the visualizing a scheme*)	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Focus on those that really want to cooperate/participate and their participation might attract others not so committed	-
- Develop a label/watermark to be used by organizations	-
- Certification process validation --> accreditation process	-
- Sell why to do such self-assessment: reputation, needed for being selected for funding?	-
- Social return on investment (SROI)	-
- Develop a guide to use the self-assessment tool	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Assessment by experts	-
- Dimensions of RRI + interviews (it costs something but it is an investment)	-
- Tool --> consulting/business assessment	-
- Business gives the problem; I will have a Skype with experts, suggestions.	-
- Applicable, easy going process	-
- Interaction, discussion is the best	-
- Solution oriented	-

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Classification of the suggestions from the seven working tables: <u>Improvement / how to use (difficulty of implementation)</u>

Very low	Low	Medium	High
- Make sure the terminology is correct. Project unity idea --> is HubIT for ICT/SSH actors or EU research projects?	- It should be a set of questions. More questions = better	- Needs to be personalized	- Not assess <--> raise awareness
- Enlarging the RRI	- Optimal: 3-4 questions/dimensions	- Focus on the priorities of the project/organization and then every user should personalize for the concrete project/organization	- There should be awareness that assess could be a difficult task and dangerous
- Invite external moderators to take part in the (self) assessment exercise (for advices)	- At least 1 open question	- It should be clear	- Create minimum standards for irresponsibility/responsibility
- The focus should be on the team and the end of result you want to achieve. based on this you design the tools (See picture for the visualizing a scheme*)	- a filtering option --> to adapt it according to the needs	- It is up to each user to select areas of evaluation. It should not be a fixed tool/structure	- Better is to use self-reflection instead of self-assessment
- Assessment by experts	- Different questions by type of evaluator	- flexibility is important	
- Dimensions of RRI + interviews (it costs something but it is an investment)	- Use ICT language	- This should be moved towards being more standardized (work with commission)	
- Business gives the problem; I will have a Skype with experts, suggestions.	- More interaction in the indicators	- Integration with SME assessment tools	
	- Should be a voluntary exercise	- Should build upon one project tools that has already been developed	
	- Focus on those that really want to cooperate/participate and their participation might attract others not so committed	- Include artificial intelligence and emerging technologies	
	- Sell why to do such self-assessment: reputation, needed for being selected for funding?	- Make the tools more participatory. For instance, a one-day self-assessment. Include a visionary element where do we want to be in x months	
	- Social return on investment (SROI)	- Suggest corrective actions (such as link to other resources in the framework model)	
	- Develop a guide to use the self-assessment tool	- Develop a label/watermark to be used by organizations	
	- Applicable, easy going process	- Certification process validation --> accreditation process	

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	- Interaction, discussion is the best	- Tool --> consulting/business assessment	
	- Solution oriented		
7	**15**	**14**	**4**

CLUSTER	NEEDS	ACTIONS
A - Need to include specific characteristics in the assessment tool	-Yes, you need to provide some homogeneous criteria	- Develop a guide to use the self-assessment tool
	- Yes, to give awareness	- Applicable, easy going process
	- In favour of the online tools	- Interaction, discussion is the best
	- Yes: Examples of tools for assessment: Green impact (environmental impact) UK Universities Athena SWAN: RRI gender tool (Women in stem) Global reporting initiatives (GRI) --> guidelines as well HRS4R tool --> matrix of x indicators to receive a label on resource management Called! the Interactive edge (UK example) --> EDGE tool assessing public engagement of public Universities	- Solution oriented - Needs to be personalized - Focus on the priorities of the project/organization and then every user should personalize for the concrete project/organization
	- Yes, for companies	- It should be clear
	- Possibility to share and configure the parameters	- It is up to each user to select areas of evaluation. It should not be a fixed tool/structure
	- Yes, but important is to explain practical use of the assessment. Users need to know why to do it. Useful for example - for review, for external use.	- flexibility is important
	- It should provide a structure with questions in order to help people to improve the findings	- Integration with SME assessment tools
	- It should lead you to prepare your own action plan	- Should build upon one project tools that has already been developed
	- Probably it is not sufficient to just assess but also analyse importance of practical usage of the assessment --> objective	- Include artificial intelligence and emerging technologies
	- It should help to develop these ideas further	- Make the tools more participatory. For instance, a one-day self-assessment. Include a visionary element where do we want to be in x months
	- Suitable for dissemination?	- Suggest corrective actions (such as link to other resources in the framework model)
	- It needs to be clearly useful and user friendly!	- Develop a label/watermark to be used by organizations
	- It should not be perceived as a judgment of people's work. Make the tools more motivational	- Certification process validation --> accreditation process
	- Do not develop only the tool but teach also how to use it --> participate self-assessment tool	- Tool --> consulting/business assessment
	- Find the most appropriate indicator system to assess the organizations and projects	
	- Every measurement is quantitative. More people or more materials might not be better. It should be more qualitative	

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	- Expert assessing --> goals vs result - Community building - There is a need to have knowledge on the area - Why did you fail, you had all the tools??! - The questionnaire is too long, evaluation cannot be more relevant than research	
B - Need to better explain the tool	- Yes, but the description in the text is a bit mixed up - Yes, if you keep it simple (it is difficult) - Yes, if there is a reason why they exist - Are we focusing on projects or organizations? Isn't the latter an overreach? The final focus is still EU projects - What is the timing for implementing the tool? Needs to be clarified: what is the focus, the ICT & SSH or EU projects, etc? - There is the risk of losing the focus from research to RRI - Be careful this does not turn into a 'box ticking' exercise - Lack of standardization - does not may much, does not add value. It is also difficult - Online tool will not solve this	- Make sure the terminology is correct. Project unity idea --> is HubIT for ICT/SSH actors or EU research projects? - Dimensions of RRI + interviews (it costs something but it is an investment) - Sell why to do such self-assessment: reputation, needed for being selected for funding? - This should be moved towards being more standardized (work with commission) - Create minimum standards for irresponsibility/responsibility - Better is to use self-reflection instead of self-assessment
A - OTHER	- Yes, if it is an internally imposed evaluation - KPIs can score people away, they feel like enforcement - This is the tool that encourages people to do more - Yes and no - It depends on purpose of assessment - Yes, if it is an internally imposed evaluation - It is dangerous to formally measure the RRI. Not to formalize, not to force. Overdoing it - Not at all. Could be for companies to include SSH - Specify target group: in our view ICT organizations. Projects with ICT focus - HubIT is detaching itself from the process and the IT people - Criteria around criteria that are difficult to assess as dangerous - It should be not like research ethics where the content already gets lost	- Enlarging the RRI - Invite external moderators to take part in the (self) assessment exercise (for advices) - Business gives the problem; I will have a Skype with experts, suggestions. - Different questions by type of evaluator - Should be a voluntary exercise - Focus on those that really want to cooperate/participate and their participation might attract others not so committed - Not assess <--> raise awareness - There should be awareness that assess could be a difficult task and dangerous

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TOOL 10 - Key measurable success indicators

Question 1: Is it perceived as useful by users? Explain why

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- No, they are unnecessary as they do not correspond to the project goal	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, it is useful if we can benchmark	-
- Link between indicators and better research results	-
- Focus the message of RRI to be promoted --> better research?	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes, but those proposed should be changed	-
- To change especially ethical KPIs. We should check if ethical issues are implemented and how	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Customized: Yes	-
- Universal: Yes	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- No, not the way it is presented now, but they could be useful if changed	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Yes	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- No	-
- Yes, for the EC. Target group is EC	-

Classification of the suggestions from the seven working tables: Usefulness

YES	YES, BUT....	NO, BUT....	NO
- Customized: Yes	- Yes, it is useful if we can benchmark	- No, not the way it is presented now, but they could be useful if changed	- No, they are unnecessary as they do not correspond to the project goal

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- Universal: Yes	- Link between indicators and better research results		- No
- Yes	- Focus the message of RRI to be promoted --> better research?		
	- Yes, but those proposed should be changed		
	- To change especially ethical KPIs. We should check if ethical issues are implemented and how		
	- Yes, for the EC. Target group is EC		
3	**6**	**1**	**2**

Analysis of the suggestions

Positive versus negative

- 9 suggestions to maintain the tool and 6 of them point out criticalities in the elaboration of the tool and suggest modifications aiming to obtain an improvement.
- 3 suggestions to delete the tool

List of the criticalities

The main criticalities on the usefulness are related to:
- the need to include specific characteristics in the assessment tool

Question 2: Potential problems/limitations in use

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Success is a binary word, it is not neutral. It is going to put people off	-
- Overreach (the project goal is to make ICT people work together with SSH + RRI purposes). Where success in this?	-
- are numerical, which is bad	-
- This is shifting responsibility from ICT and letting them just "tick the boxes"	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Engagement is not being present, it is doing some action	-
- It should be done but could have a negative impact on research results --> Actions that show engagement.	-

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- KPI: number of ethical evaluators --> this is not a good indicator	-
- Something is not possible to measure	-
- Public engagement: we need to know also when, why they participate	-
- Experts are sceptical about KPIs proposed	-

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Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- Customization (who would do it?)	-
- Not too many KPIs, not overloading	-
- Not too prescriptive	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- Quantitative vs. qualitative aspects. Focusing on this in the current document. Qualitative aspects are needed too! Numbers are not enough	-
- Open access only focuses on produced literature (open access documents). What about videos?	-
- Quotation can't be measured within the lifespan of a project.	-
- The indicators are quite flat	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- How will ICT developers assess some very specific indicators?	-
- Too wide area, pick out	-
- Use both qualitative and quantitative indicators	-
- Medium and long-term impact --> qualitative. Each impact shall have a qualitative dimension (e.g. degree of satisfaction, degree of change)	-
- Use case connection is not clear. Too much forced	-

Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- It does not say anything about the quality if you have many participants	-
- The numbers do not make sense	-
- Area specific, numbers attended? Assessing everything according to the same criteria does not give the variety. We measure everything with some measure. It is not good for innovation	-
- If it is a small project it is difficult to engage that much	-
- Gender should not be a part of RRI. Overlaps with things that have been already asked (ethics)	-

Classification of the suggestions from the seven working tables: <u>Limitations in the use</u>

Very low	Low	Medium	High
	- Public engagement: we need to know also when, why they participate	- Success is a binary word, it is not neutral. It is going to put people off	- The numbers do not make sense
	- Experts are sceptical about KPIs proposed	- Overreach (the project goal is to make ICT people work together with SSH + RRI purposes). Where success in this?	- Area specific, numbers attended? Assessing everything according to the same criteria does not give the variety. We measure everything with some measure. It is not good for innovation

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	- Customization (who would do it?)	- are numerical, which is bad	- If it is a small project it is difficult to engage that much
	- Not too many KPIs, not overloading	- This is shifting responsibility from ICT and letting them just "tick the boxes"	- Gender should not be a part of RRI. Overlaps with things that have been already asked (ethics)
	- Not too prescriptive	- Engagement is not being present, it is doing some action	
	- Quantitative vs. qualitative aspects. Focusing on this in the current document. Qualitative aspects are needed too! Numbers are not enough	- It should be done but could have a negative impact on research results --> Actions that show engagement.	
	- Open access only focuses on produced literature (open access documents). What about videos?	- KPI: number of ethical evaluators --> this is not a good indicator	
	- Quotation can't be measured within the lifespan of a project.	- Something is not possible to measure	
	- The indicators are quite flat	- It does not say anything about the quality if you have many participants	
	- How will ICT developers assess some very specific indicators?		
	- Too wide area, pick out		
	- Use both qualitative and quantitative indicators		
	- Medium and long-term impact --> qualitative. Each impact shall have a qualitative dimension (e.g. degree of satisfaction, degree of change)		
	- Use case connection is not clear. Too much forced		
0	**14**	**9**	**4**

Analysis of the suggestions

Positive versus negative

- 14 suggestions address very low or low limitations in the use.
- 13 suggestions address medium and high limitation.

List of the limitations

The main limitations concern:

- the need to include specific characteristics in the assessment tool.

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Question 3: How to use/How to improve/Suggested content and functionalities

Suggestions from the seven working tables

Working table 1	
Suggestions	**Explanation (if a clarification is necessary)**
- Should not be quantified, rather qualitative. Suggestions to reflect on specific topics	-
- Do not give them numbers. Give constructive reflection. Number don't help to change behaviour	-

Working table 2	
Suggestions	**Explanation (if a clarification is necessary)**
- Take into account the difference between research and innovation	RRI is a concept to be promoted. The results in research and innovation connected with responsibility have to be evaluated. Results can be of research or can be on innovation; this means for example that they could be related to innovative products or services developed for improving for example the quality of life.

Working table 3	
Suggestions	**Explanation (if a clarification is necessary)**
- Idea: To check how are mandatory "numbers" used in practice (e.g. % of women - but how does it look like in reality!)	-
- It would be useful to include also open questions, qualitative data	-

Working table 4	
Suggestions	**Explanation (if a clarification is necessary)**
- There should be core KPIs which lead to others in a tree format. The customized KPIs can use specific information about the company/sector/environment	-
- It depends on the levels of the company	-
- Start from universal and then customize it	-

Working table 5	
Suggestions	**Explanation (if a clarification is necessary)**
- The indicators should focus on progress	-
- A conceptual shift is needed. Outcome vs. output (check the EC's impact assessment paper)	-
- We need objectives and criteria before defining indicators	-
- Go back to the principles of RRI	-
- KPIs should measure RRI in scientific processes where SH and ICT collaborate. This is not clear right now	-

Working table 6	
Suggestions	**Explanation (if a clarification is necessary)**
- Qualitative + quantitative indicators (e.g. quantitative: number of women in a team, qualitative: the position they take)	-
- Indicator results shall lead to discussions in the team	-
- Add narratives that can facilitate discussion	-

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Working table 7	
Suggestions	**Explanation (if a clarification is necessary)**
- Science education: did you found it useful. Should be qualitative	-
- Governance: it does not say much about the value if is dedicated at each meeting 5 minutes to RRI	-
- It should help you to make better technology: attractive, less obstacles, future-oriented, co-creation with SSH. It is your product better now. Application: Writing the project, what do you think how does your project impacts society? (EC) Application form: does your project has impact to the society. If yes, how do you include SSH? What methods do you use to ensure the impact?	-

Classification of the suggestions from the seven working tables: <u>Improvement / how to use (difficulty of implementation)</u>

Very low	Low	Medium	High
- It would be useful to include also open questions, qualitative data	- Should not be quantified, rather qualitative. Suggestions to reflect on specific topics	- Do not give them numbers. Give constructive reflection. Number don't help to change behaviour	- Take into account the difference between research and innovation
- The indicators should focus on progress	- A conceptual shift is needed. Outcome vs. output (check the EC's impact assessment paper)	- There should be core KPIs which lead to others in a tree format. The customized KPIs can use specific information about the company/sector/environment	- Idea: To check how are mandatory "numbers" used in practice (e.g. % of women - but what does it look like in reality!)
- We need objectives and criteria before defining indicators	- KPIs should measure RRI in scientific processes where SH and ICT collaborate. This is not clear right now	- It depends on the levels of the company	- Governance: it does not say much about the value if is dedicated at each meeting 5 minutes to RRI
- Go back to the principles of RRI	- Qualitative + quantitative indicators (e.g. quantitative: number of women in a team, qualitative: the position they take)	- Start from universal and then customize it	- It should help you to make better technology: attractive, less obstacles, future-oriented, co-creation with SSH. It is your product better now. Application: Writing the project, what do you think how does your project impacts society? (EC) Application form: does your project have impact to the society. If yes, how do you include SSH? What methods do you use to ensure the impact?
- Indicator results shall lead to discussions in the team			
- Add narratives that can facilitate discussion			
- Science education: did you found it useful. Should be qualitative			
7	**4**	**4**	**4**

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CLUSTER	NEEDS	ACTIONS
A - Need to include specific characteristics in the assessment tool	- Customized: Yes	- It would be useful to include also open questions, qualitative data - The indicators should focus on progress - We need objectives and criteria before defining indicators - Go back to the principles of RRI - Indicator results shall lead to discussions in the team - Add narratives that can facilitate discussion - Science education: did you found it useful? Should be qualitative - Should not be quantified, rather qualitative. Suggestions to reflect on specific topics - A conceptual shift is needed. Outcome vs. output (check the EC's impact assessment paper) - Qualitative + quantitative indicators (e.g. quantitative: number of women in a team, qualitative: the position they take) - Do not give them numbers. Give constructive reflection. Number don't help to change behaviour - There should be core KPIs which lead to others in a tree format. The customized KPIs can use specific information about the company/sector/environment - Take into account the difference between research and innovation - Idea: To check how are mandatory "numbers" used in practice (e.g. % of women - but how does it look like in reality!) - It should help you to make better technology: attractive, less obstacles, future-oriented, co-creation with SSH. It is your product better now. Application: Writing the project, what do you think how does your project impacts society? (EC) Application form: does your project have impact to the society. If yes, how do you include SSH? What methods do you use to ensure the impact?
	- Universal: Yes	
	- Yes, it is useful if we can benchmark	
	- Link between indicators and better research results	
	- Focus the message of RRI to be promoted --> better research?	
	- Yes, but those proposed should be changed	
	- To change especially ethical KPIs. We should check if ethical issues are implemented and how	
	- No, not the way it is presented now, but they could be useful if changed	
	- Experts are sceptical about KPIs proposed	
	- Customization (who would do it?)	
	- Not too many KPIs, not overloading	
	- Quantitative vs. qualitative aspects. Focusing on this in the current document. Qualitative aspects are needed too! Numbers are not enough	
	- The indicators are quite flat	
	- How will ICT developers assess some very specific indicators?	
	- Use both qualitative and quantitative indicators	
	- Medium and long-term impact --> qualitative. Each impact shall have a qualitative dimension (e.g. degree of satisfaction, degree of change)	
A - OTHER	- Yes, for the EC. Target group is EC	- KPIs should measure RRI in scientific processes where SH and ICT collaborate. This is not clear right now - It depends on the levels of the company - Governance: it does not say much about the value if is dedicated at each meeting 5 minutes to RRI
	- No, they are unnecessary as they do not correspond to the project goal	
	- Public engagement: we need to know also when, why they participate	
	- Open access only focuses on produced literature (open access documents). What about videos?	

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	- Quotation can't be measured within the lifespan of a project.	
	- Use case connection is not clear. Too much forced	
	- Success is a binary word, it is not neutral. It is going to put people off	
	- Overreach (the project goal is to make ICT people work together with SSH + RRI purposes). Where success in this?	
	- are numerical, which is bad	
	- This is shifting responsibility from ICT and letting them just "tick the boxes"	
	- Engagement is not being present, it is doing some action	
	- It should be done but could have a negative impact on research results --> Actions that show engagement.	
	- KPI: number of ethical evaluators --> this is not a good indicator	
	- Something is not possible to measure	
	- The numbers do not make sense	
	- Area specific, numbers attended? Assessing everything according to the same criteria does not give the variety. We measure everything with some measure. It is not good for innovation	
	- If it is a small project it is difficult to engage that much	
	- Gender should not be a part of RRI. Overlaps with things that have been already asked (ethics)	

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7. ANNEX2 – KEY MEASURABLE SUCCESS INDICATORS

RRI dimension	Key impact	Key performance indicators
Public Engagement	Maximize the amount of people engaged in the scientific process	Number of participants and visitors (specifically participants not from ICT or SSH fields)
Gender Equality	Aim for gender equality in R&I production	General % of participation of women in project activities / % of women in leading positions in the organization or project
Science Education	Maximize science communication and science education	Number of educational documents produced
Open Access	Free and easy access to the maximum share of produced literature and data	Number of open access documents produced
Ethics	Increased take-up of the highest ethical standards in R&I	Number of ethical evaluations that led to changes in R&I priorities or activities
Governance	RRI values are actively enforced	Number/percentage of meetings with some RRI element on the agenda

Public Engagement

Public engagement (PE) was defined as a societal commitment to provide encouragement, opportunities and competences in order to empower citizens to participate in debates around R&I, with potential feedback and feed-forward for the scientific process. There are different expressions of PE such as citizen science, science in transition, do it yourself, tab labs, hacker spaces etc. Deeper forms of engagement in science and technology are those where citizens are peers in the knowledge production, assessment and governance processes.

PE performance indicators reflect the degree of motivation, public interest and participation in the society-science relationship. Following PE2020 project five levels of public engagement were offered highlighting growing involvement of the public in policy issues starting with communication, activism, consultation, deliberation and at the end full participation (European Commission, 2015b, p. 13). Perceptions indicators point to produce changes in interest, knowledge and attitudes toward science and technology over time.

There are three dimensions of PE indicators: 1) policies, regulation and frameworks, 2) event making and attention creation and 3) competence building. For each, there are three types of indicators: performance indicators (process and outcomes) and perception indicators.

For policies, regulation and frameworks – the process indicator is formal commitment and the outcome indicator is the share of public engagement funding from total R&I funding.

- Event making indicators include process indicators, such as consensus conferences, organized debates, political referenda, crowd-funded science development and citizen science. Outcome

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indicators include media coverage, museum visits and civil society organization activities. Perception indicators may include engagement activities, interest in science, etc.

- The main competence – building indicator of public engagement relates to the process of training communicators (scientists, engineers, mediators). The level and type of staffing of communication activities can serve as output indicators (Strand et al., 2015, pp. 21-25).

Criteria / Indicator	Type	Indicator
Public Engagement	Process	Commitments by an institution/organization to PE (organization type, structure, mission, values, goals)
		Number, type and purpose of PE initiatives/activities
		Number of facilitators/science communicators and current experience and training opportunities for facilitators (organizational capacity)
		Public engagement elements as evaluative criteria in evaluation activities
		Dedicated resources for PE (% of total budget, PE specialists as consultants, PR staff)
	Outcome	Changes in agendas/organizational practices as a result from public engagement at event/ as a result of the whole project
		Additional resources dedicated for PE as a result of event/project (% of total budget, PE specialists as consultants, PR staff)
		Collaborations with social scientists/ICT specialists
		Number and type of visitors/participants at activities
		Media coverage
		Number and type of collaborations (interdisciplinarity, extent, length, outcomes)
Public Engagement	Outcome	Number and type of participant-initiated/led activities
		Types of skills developed by participants and facilitators (organizational practice/structure to support/utilize the new skills)
		Percentage of projects/collaborations developed as a result of HubIT that involve a public engagement dimension
	Perception	Public interest on impact of science & technology
		Public expectations of engagement in decision-making processes
		Perceived 'level' of participation/ contribution

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		Perceived level of engagement
		Attitude toward facilitator and organization during an event

Gender Equality

Gender equality (GE) in RRI may fall into two categories – promotion of equal participation in research activities, and integration of gender aspects in R&I content. Indicators focus on the processes of institutional change in gender equality. The indicators also address such issues as changes in processes that impact the career path of women in research areas, bias-reducing cultural changes, including unconscious gender bias, etc. The second category (content) may be addressed by measuring the number of research activities that include gender analysis. Process indicators here include the proportion of research institution that implement gender equality plans, or provide training in gender issues. Output indicators may include the proportion of women in advisory committees, and in expert groups. Other indicators may include the perception of young people regarding gender roles in science, and the perception of R&I workers regarding gender equality (Strand et al., 2015, pp. 26-27).

Criteria	Type	Indicator
Gender equality	Process	Gender equality commitments/frameworks (organization structure, mission, values, goals) among partners
		Inclusion of gender equality into evaluation
		Number and type of events/trainings promoting gender equality/representation
	Outcome	Percentage of women a) attending events; b) facilitators and collaborators; c) in Advisory Boards
		Number and share of women participants from the ICT sector (vs. social sciences)
		Percentage of women initiating/leading citizen initiatives (leading discussions, raising issues, shaping events etc.)
		Percentage of women sharing feedback (surveys, interviews) / content of feedback - what is relevant to them, what is of interest, what is missing?
		Percentage of projects/collaborations developed as a result of HubIT that involves a gender dimension
Gender equality	Perception	General perception of gender equality
		Perception of opportunities for women in ICT/SSH (compared to men?)

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		Perception of gender equality efforts (generally - at the project level and at specific events)
		General perception of gender equality issues in ICT/SSH
		Perception/awareness of gender equality efforts/initiatives in ICT/SSH
		Perception/awareness of gender equality issues in ICT/SSH relevant to their own lives
		Attitudes towards gender equality in science

Science Education

The EC explains the dimension of science education in the following way:

"Europe must not only increase its number of researchers, it also needs to enhance the current education process to better equip future researchers and other societal actors with the necessary knowledge and tools to fully participate and take responsibility in the R&I process. There is an urgent need to boost the interest of children and youth in math, science and technology, so they can become the researchers of tomorrow, and contribute to a science-literate society. Creative thinking calls for science education as a means to make change happen," (Strand et al., 2015, p. 29).

Science education is executed in several ways: educating (especially young) citizens about scientific facts, the norms of science and the way science is 'done', as well as conveying a positive 'image' of sciences. It also provides the opportunity to reflect and question science and the 'truths' it produces critically.

Process indicators in this area include the requirement for RRI-related training in research programs and capacity building for RRI-related training. Outcome indicators include RRI subjects in lower and higher education qualification frameworks, training courses in RRI, and requirement for RRI training for young researchers in R&I projects. Perception indicators refer to the degree that R&I actors and stakeholders are knowledgeable and sensitive to the EU values and the needs and concerns of the citizens (Strand et.al., 2015, pp. 29-30).

Criteria	Type	Indicator
Science Education	Process	Capacity building initiatives at the organizational level & organizational infrastructure (facilitators training, sources, guidance, content, resources, learning plans/methodologies/procedures)
		Strategies for science-learning outcomes at events (approaches, methodologies for SL, recognition of participants existing skills)
		Funding allocated for science education activities
		Science communication culture
	Outcome	Skills gained by event participants

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		Evolution of methods for science education at organizational level
		Science/RRI training events/components
		Percentage of projects/collaborations developed as a result of HubIT that involve a science education dimension
	Perception	Attitudes towards science education
		Understanding of science, attitudes towards science, attitudes towards their own abilities

Open Access

Open science (based primarily on the open access) is a practice in which the scientific process and outcomes are shared completely and in real time. It offers the potential to support information flow, collaboration and dialogue among professional and non-professional participants. (Grand et al., 2014). Winfield (2014) has distinguished between three levels of open science:

- Level 0: maintenance, sharing through web site.
- Level 1: Level 0 plus additional sharing via blogs, reports to comments or feedback.
- Level 2: Levels 0, 1 and additional uploading of experimental data sets to the project website.

Documentation of open access policies and mechanisms for promoting open science are examples of process indicators in this area. As for output indicators, research projects with virtual environments for sharing research results, and research projects with daily online laboratory notebooks can be used to measure open science. Perception indicators are measured through the extent to which members of the public visit such environment and find them useful.

Criteria	Type	Indicator
Open access/open science	Process	Existence of open science policies
		Institutional mechanisms for promoting open science
		Documentation of mechanisms for learning from open science experience
	Outcome	Amount of produced documentation as a result of HubIT project in open access, that is updated and actively used with a threshold frequency
		Percentage of research projects/collaborations as a result of HubIT project, that have created outputs that are publicly available and actively used
		Percentage of data repositories created in the project that include explanation and commentary to facilitate use.

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		Percentage of research projects that report real added value by an open science mechanism (for themselves and/or other actors)
		Take up of the Open Access literature
	Perception	Feedback on the usability of the Open Access environment
		Public perception of/ attitudes towards open access

Ethics

Ethics in RRI is based on the EC assertion that "in order to adequately respond to societal challenges, research and innovation must respect fundamental rights and the highest ethical standards. Beyond the mandatory legal aspects, this aims to ensure increased societal relevance and acceptability of research and innovation outcomes," (European Commission, 2012). In the broad RRI context, ethics can be divided into the following three subfields.

- Research integrity and good research practice, which is concerned with issues such as scientific misconduct and questionable research practices (e.g. plagiarism, fabrication, fraud, authorship and intellectual property, and citation/acknowledgement practices, scientific neutrality, conflicts of interest in peer review and scientific advice, etc.).
- Research ethics for the protection of the objects of research. The ultimate goal of policy in this field is that human beings, animals and other objects of research are duly protected. The existence and proper functioning of institutional procedures are clearly relevant measures for this goal.
- Societal relevance and ethical acceptability of R&I outcomes is a main issue in the promotion of RRI policies and indicators as it should be designed in accordance with the understanding, that this issue is a challenge of governance in complexity that calls for a network approach. This dimension is the one that is closest to the general policy of RRI as a cross-cutting principle and the one for which the European Union has its most distinct role to play.

Process indicators of ethics include mechanisms for appraisal of ethical acceptability, documented by different projects such as: ELSI/ELSA (Ethical, Legal and Social Implications/Aspects of research) project component for ethical acceptability and formal ethics reviews such as an Institutional Review Board clearance. Outcome indicators include documented changes in R&I priorities attributable to the appraisal of ethical acceptability, and percentage of research proposals that require substantive changes because of ethics review clearance process (Strand et al., 2015, p. 36).

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Criteria	Type	Indicator
Ethics / Social inclusion	Process	Existence of an ethics committee/ Research Ethics Committee / Research Ethics Officer
		Mechanisms for multi-stakeholder/transdisciplinary processes of appraisal of ethical acceptability (best practices)
		Documentation regarding normative tensions related to research integrity policies and actions
		RRI/ELSI/ELSA component in statutory documents of organisation/project/event?
		Formal and actual scope of ethics review
		Strategies for addressing access issues from disadvantaged social groups: Number and type of strategies for e.g. the disabled, illiterate people, migrants, elderly people, single parents, etc.
		Considerations/strategies of benefits from activities
		Considerations/strategies for the design of communication and outreach strategies to reach disadvantaged group
		Number of stakeholders who actively review/show interest in research results that have an impact on social inclusion
	Outcome	Documented change in R & I priorities attributable to appraisal of ethical acceptability
		Integration of ethics assessment into HubIT activities, its scope, mechanisms, significance
		The percentage of activities purposefully delivered in accessible locations (e. community centres)
		The percentage of activities purposefully modified to address issues of social justice and inclusion (method, technique, needs of specific community)
		The percentage of participants attending events from disadvantaged groups (+how they found out about the event)
		The percentage of activities that may have unintended negative effects on social inclusion/justice (benefits only small portion of population or created barriers)
		Percentage of projects/collaborations/activities that have modified their methodology to include/benefit disadvantaged groups

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	Perception	Perception of the value of ethics in day to day activities
		Perception of importance of social inclusion in the project day-to-day activities
		Attitudes towards ethics in science

Governance

Governance in RRI is understood as an active participation of all relevant stakeholders in developing an RRI policy. Frameworks in which stakeholders can collaborate to that effect are being developed at all hierarchical levels of the science and innovation system. This indicator has subcategories that represent the degree of involvement of the public in governance and decision-making. Following are these sub categories as defined by the EC (2015a, p. 16).

- Discretionary governance in which policies are made without explicit interactions with the public.
- Corporatist governance where policy is negotiated within closed stakeholders' space.
- Educational governance – policy is made by informed citizens.
- Market governance – policy is regulated by demand and supply. The public participation as customers and consumers.
- Agonistic governance – policies are made through confrontation.
- Deliberate governance – policies are made through debates. The public is regarded as scientific citizens.

Strand et al. (2015) offer an example of a full set of indicators that serves as a crosscutting principle for the whole of H2020. The information on the state of the RRI indicators and their criteria are presented in a matrix table and can also serve the HubIT project.

Criteria	Type	Indicator
Governance	Process	Existence and nature (inclusivity) of formal RRI governance structures inside the project
	Outcome	Number of debates/policies/protocols/agreements taken with the active participation of all project members/ other relevant actors (civil society representatives, NGO, policy makers, public)
	Perception	Involvement of the wider public in RRI debates
		Attitudes towards governments role in science
		Government role in addressing gender equality in science

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