

**SMART·map**

*RoadMAPs to Societal Mobilisation for  
the Advancement of Responsible  
Industrial Technologies*

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## D 2.1 Industrial Dialogue Format

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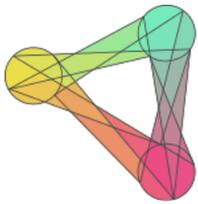
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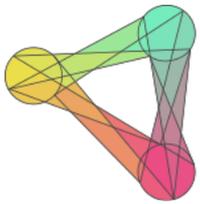
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## Content

Content.....	2
List of Tables .....	4
List of Figures.....	4
1 Introduction.....	5
1.1 The Aim and Expected Outputs of the Industrial Dialogues.....	5
1.2 The Target Group of the Industrial Dialogues.....	6
2 Content of the Industrial Dialogues .....	8
3 Dialogue Event Resource Requirements .....	22
3.1 Dialogue Event Duration .....	22
3.2 Dialogue Event Costs .....	22
3.3 Dialogue Event Facility Requirements.....	23
3.4 Dialogue Event Personnel Requirements .....	23
3.5 Dialogue Event Material Requirements.....	25
4 Planning the Industrial Dialogue .....	27
4.1 Early Planning .....	27
4.2 Intermediate Planning .....	29
4.3 Final Preparations .....	30
4.4 Workshop Days.....	31
4.5 Support provided to local hosts during the planning by the Centre for Social Innovation.....	31
5 Reporting and Follow-up.....	33
5.1 Reporting to ensure learning of SMART-Map partners .....	33
5.2 Reporting on the outputs of the industry dialogue events .....	33
5.3 Capturing the effects of the industry dialogue events .....	34
Bibliography.....	35
Annex 1: Theoretical Basis for Industrial Dialogues .....	37
ANNEX 2: Methodological basis for Industrial Dialogues .....	41
ANNEX 3: Invitation letter to industrial dialogue events .....	46





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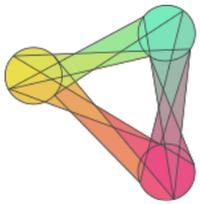
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ANNEX 4: Template for collecting Industries RRI experience .....	47
ANNEX 5: Template for collecting Industries RRI experience .....	48
ANNEX 6: Feedback Formula .....	50
ANNEX 7: Post-Event Reporting Template .....	51
ANNEX 8: Reporting the results of the Industry Dialogue .....	53



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## List of Tables

Table 1: Agenda of the Industrial Dialogue Events .....	10
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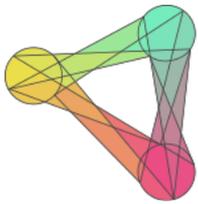
## List of Figures

Figure 1: Industrial Dialogue Events.....	6
Figure 2: Building Blocks of the Industrial Dialogue.....	9



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## 1 Introduction

The aim of the SMART-Map-project is to connect a wide range of industrial players with actors from research and civil society organisations and establish innovative formats of collaboration to jointly discuss, define and implement concrete roadmaps (SMART Maps) for the responsible development of technologies and services in three key time-changing fields. Based on the Societal Challenges of Horizon2020, SMART-map will address the areas of precision medicine, 3D printing in the biomedical field, and synthetic biology.

The SMART-Map project pursues these ambitious aims by developing a new format for open and collaborative dialogues between industry, academia, and societal actors, which will allow co-design of concrete roadmaps which will support industries in employing RRI in their innovation and business processes. The project will organise together six dialogues; two dialogue events per industry field in two paired regions of Europe, on the north-south and east-west axes. Through testing and assessing the roadmaps, SMART-Map will deliver practical evidence of the benefits of responsibility for industries and highlight opportunities for new business models embedding social responsibility.

The aim of this document is to lay out the format for these six industrial dialogues that will be organised by the SMART-Map project partners from December 2016 to April 2017 in Manchester, Aarhus, Budapest, Milan, Munich, and Valencia.

Chapter 2 will firstly introduce the building blocks and an agenda of an industrial dialogue. Chapter 3 and 4 describe the resources and activities needed for successful planning and delivery of the dialogues, and chapter 5 the follow up activities, which will ensure comprehensive recording of dialogue outputs and learning effects.

### 1.1 The Aim and Expected Outputs of the Industrial Dialogues

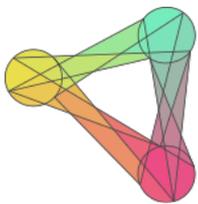
The dialogues establish an innovative format of collaboration between industry, academia, and societal actors, which allows actors, discuss and co-design concrete roadmaps for the responsible development of technologies and services in three key game-changing fields. The theoretical grounds for organising a multi-stakeholder dialogue to provide inputs for industries' innovation processes can be found in innovation theories, which emphasise the role of interaction and flow of information between industries and extra-industrial actors to industries innovative capacities (see Annex 1 for theoretical grounds).

The dialogues aim at resulting in concrete co-designed tool (i.e. SMART-Map) to support businesses in inclusion of RRI in their innovation and business processes. This tool will be tested in pilot-firms (see figure 1) and assessed during the project. In order to pave a way for co-creation of the tool, the industry dialogues will explore the stakeholder experiences with RRI and draw visions for better inclusion of RRI in the three industry fields.



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Together 6 industrial dialogue events will be organised; two dialogues per sector in two different cities (between December 2016 and April 2017). Organisation of two identical events in two geographical locations will enable a comparative assessment of dialogue results.

	Synthetic Biology	Precision Medicine	3D printing biomedical sector
1 <sup>st</sup> Dialogue 1,5 days	Manchester, UK	Aarhus, DK	Berlin/Munich, DE
2 <sup>nd</sup> Dialogue 1,5 days	Budapest, HU	Valencia, ES	Milan-Monza-Varese IT
	↓	↓	↓
	PILOT firm	PILOT firm	PILOT firm

Figure 1: Industrial Dialogue Events

## 1.2 The Target Group of the Industrial Dialogues

The industrial dialogues aim to connect a wide range of industrial players with actors from research and civil society organisations, as well as organisations setting the framework conditions for business and innovation.

The SMART-Map project has already recognised a wide range of actors, which play a role in development of responsible technologies and services. These include: the regulatory and standard setting system, the political system (in implementation and control role), the financial and service sector, extra-industrial research and education, industries, intermediaries, and societal actors representing the civil society. Following the initial mapping, an in-depth mapping of active and relevant stakeholders in each selected industry field and country will be conducted. This mapping will assist in drawing a comprehensive picture of the stakeholders and help in selecting invitees to the dialogues.

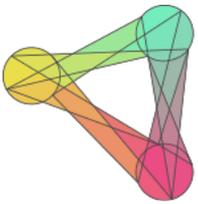
In order to allow interactive and collaborative dialogue, the targeted number of participants of each dialogue is 30. These 30 participants should represent all active and relevant stakeholder groups in the field. It has to be noted that the final number and composition of participants is defined by a pool of active stakeholders in the industry field in each country. The final selection of invitees is done by local hosts based on the stakeholder mapping.

As the core expected output of the dialogues is a concrete tool that industries can use to employ RRI, sufficient representation of different types of industry stakeholders in the dialogues should be ensured.



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Ideally, around a third of dialogue participants should represent industries,<sup>1</sup> including multinational enterprises, large enterprises, and small- and medium-sized enterprises. In order to ensure the heterogeneity of the views presented in the dialogue, the remaining 2/3 of participants should represent other types of organisations:

- political and financial actors (5 invitees)
- extra-industrial research actors (5 invitees)
- civil society actors (10 invitees)

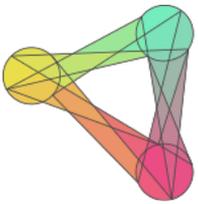
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<sup>1</sup> e.g. Nootbloom (1999) and Robinson (2010) have discussed about the ideal heterogeneity in interactive group situations. While the diversity can have a U-shape correlation with the productivity of interaction in a group, the group diversity is important for the learning process. According to Robinson (2010) the selection and invitation of the participants will depend on the stage of development, the situation in specific domains and its force fields.



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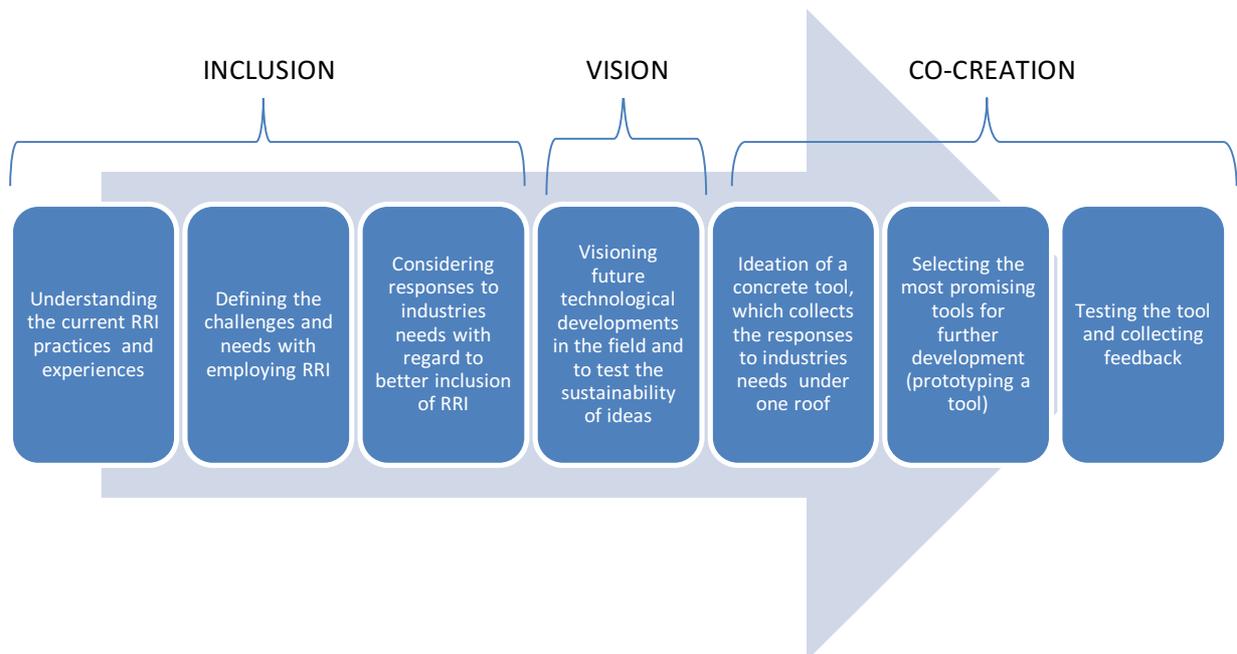


## 2 Content of the Industrial Dialogues

The innovative format of the industrial dialogues is inspired by design thinking. Design thinking is a method for creative action, which utilises different methodologies for interactive group work. It was chosen as a methodology as the dialogues main aim is to co-design a concrete tool, which supports industries in responsible innovation processes.

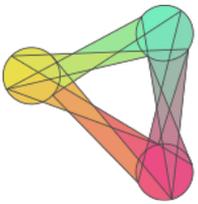
The process of co-designing a concrete tool, which we have shaped in a form of a design challenge (“Redesign an innovation process to be responsible... for industry x”), starts with understanding industries’ needs, after which ideas to respond these needs are explored. In order to ensure that the responses are sustainable, future technology and knowledge developments in the field will be envisioned. The ideas to responding industries’ needs with regard to RRI will be then brought under one roof; a concrete tool to support industries in responsible innovation process. Different kinds of tools will be considered and the most promising will be selected for further development.

To better structure the process, the dialogue has been divided in three blocks; inclusion, vision and co-creation, with each comprising of a number of consecutive sessions (figure 2).



**Inclusion:** The inclusion block aims at familiarising the participants with the RRI as well as building a view of the state of RRI implementation in the specific industry field. The approach aims to trigger debate, gather and consolidate people’s attitudes and result in increased awareness, inclusion and learning of industries RRI experiences.

**Vision:** Building on foresight methodology, the vision block will aim at jointly discussing the anticipated future developments in the specific industry field and RRI in this field. The foresight methodology aims at



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facilitating a strategic stakeholder dialogue on possible and/or desirable futures and result in roadmaps to reach the desirable future.

Co-creation: Building on prototyping elements of design thinking, the co-creation block will aim at creating a concrete tool to support businesses in inclusion of RRI in innovation and business processes in the specific industry sector. The method aims at involving users from the very beginning to the development of a tool, which will respond to their needs.

Figure 2: Building Blocks of the Industrial Dialogue

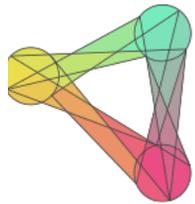
Different kinds of interactive group work methods can be utilised in the delivery of a design thinking workshop (see Annex 2 for detailed description of group work methodologies). Building on these methods, the following detailed agenda is proposed for industry dialogues (table 1).

Although the events should follow an identical agenda in order to reach a maximum comparability, the proposed agenda can be adapted to fit to the specificities of each industrial sector and national system of innovation in the sector.



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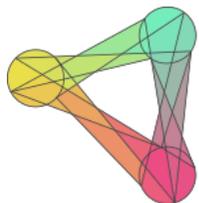
**Table 1: Agenda of the Industrial Dialogue Events**

Agenda – DAY 1					
Time	Name of the Session	Aim	Details	Language	Reporting
09:30	Welcome by the host	Welcome the participants to the day	The local host will introduce the host organisation and welcome the participants.	EN	
09:35	Introduction to SMART-Map - project and the Industrial Dialogue	Introduce the SMART-Map Project and the aim of the event	The project coordinator of SMART-Map will give a short introduction to the SMART-Map project, the background and the aim of the Industrial Dialogue.	EN	
09:45	Industry Sector X: where do we stand?	A key note speech gives an overview on the developments in the industry sectors, in order to level out knowledge of participants	An established academic or industry representative will give a key note speech, which will draw an overview on the state of play on the industry sector in terms of technologies and discussions. The key note speaker will be asked to include in the presentation some practical examples of RRI in the field.	EN	
10:05	Tour de table	Introduce the participants of the dialogue event	A version of tour de table, which will visualize the position of participants in the innovation system of the industry field. After introducing the sector's innovation system, the participants will be asked to write on paper their organization	EN	



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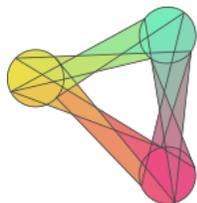
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			<p>name, two lines about what the company does and pin it to the relevant position in the innovation system. Moderator picks names one by one, lets the participants introduce themselves.</p> <p>Each participant is given a coloured sticker to attach to their clothes based on their role in the innovation system.</p>		
10.30	RRI in the industry field	Introduce the participants to RRI in the industry field through presenting the results of the RRI survey and RRI stories	<p>The local host will introduce the results of the RRI baseline survey and through this lay a picture on how RRI is understood and implemented in the industry field. The presentation utilises material developed during previous EU funded projects (Annex 4).</p> <p>RRI is not introduced through explaining the EC RRI priority areas, but picking up some innovation stories which illustrate what RRI could be about. The innovation story will be told and the RRI elements highlighted.</p>	EN	
Design Challenge: Redesign an innovation process to be responsible... for industry x					
10.45	Understanding the industries RRI experiences	Collect the experiences of the participants on RRI	Each participant is asked to think two minutes on how they implement responsible innovation.	LOCAL	



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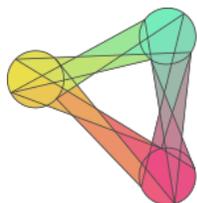
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			<p>Participants will be asked to circle in the room and conduct two interviews. With the interviews the interviewer is aiming to collect information on:</p> <ul style="list-style-type: none"><li>• What it means to do responsible innovation in industries? What aspects does responsibility include?</li><li>• Why have you (not) done it? If you are a non-industry stakeholder, what do you think are the main challenges and opportunities for industries to implement responsible innovation?</li><li>• How have you/ your organisation done it? If you are a non-industry stakeholder, what are the concrete ways for industries innovate in a more responsible manner?</li><li>• Who has done RRI in the organisation?</li></ul> <p>The interviews are conducted in two rounds (4 minutes*2), on the first round asking general questions and on the second round digging deeper into points that were perceived interesting. This will be repeated with two other partners in the room.</p> <p>To assist the participants, they will be provided a template for not taking (Annex 4). The participants are asked to interview 2 persons, who have a different coloured sticker on their clothes. This will support exchange of views</p>		
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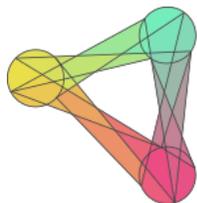
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			<p>between different kind of stakeholders.</p> <p>It is important to keep the time. In the end of the session the participants should go to sit in groups of 6. The groups will be pre-allocated, each group including different types of innovation actors.</p>		
11.20	Coffee Break				
11.45	Unpacking the RRI experiences and recognising common needs and challenges	Share and collect the RRI experiences of industries	<p>After the coffee break the groups will convene.</p> <p>The group members are asked to share learnings from the interviews. The groups will write down on a flip board all the needs, challenges and opportunities that the interviewees described.</p> <p>The last 15 minutes the groups are asked to take a step back, and see if there are common features in the challenges and needs recognise. Can a more common needs/challenge statement be formed from the needs/challenges recognised in the interviews? Can the needs/challenges be grouped and given them a common theme (ie. challenges related to sustainability)? The groups will reclassify the challenges/needs under common categories?</p>	LOCAL	



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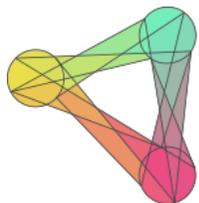
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12.30	Creating a common understanding on industry challenges and needs	Define a clear "industry need statement", which shows the point of view of the group to the challenge	<p>The groups will present their findings on the industries RRI needs and challenges in employing RRI. Each group will select one presenter, who introduces the results. Each presenter has 5 minutes for the presentation.</p> <p>By the end of the presentations there will be a plenary discussion. During the group presentations the facilitator will collect the main needs and challenges on boards and group them (if possible according the different EC RRI dimensions). If certain key aspects will not be addressed by the groups, the facilitator will pose them to the group, and ask the participants to comment on these needs/challenges. If the participants are not responsive, the facilitator can organise a simple voting (ie. raise your hand if the challenge X should be added to the ones the groups have defined).</p> <p>Groups go back and can amend their category list based on the plenary discussion (5 minutes)</p>	<p>ENGLISH (WRITTEN MATERIAL)</p> <p>LOCAL (GROUP WORK)</p>	



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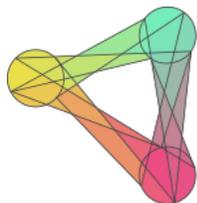
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13.00	Lunch				
14.00	Brainstorming	To generate a quantity of ideas to meet the needs of the “industry user”	<p>The groups are asked to sketch as many ideas as they can to meet their “industry users” needs. Mentally brainstorming represents a process of “going wide” in terms of concepts and outcomes—it is a mode of “flaring” rather than “focus.” The goal brainstorming is to explore a wide solution space – both a large quantity of ideas and diversity among those idea as well as to leverage the collective thinking of the group, by engaging with each other, listening, and building on other ideas.</p> <p>This step is meant to produce the components that will be used in order to build the tools prototypes in the fast prototyping session at the end of the day.</p> <p>The group members will write their ideas on a post it and call them out when they add them to the big paper put on each table.</p> <p>After 25 minutes of discussion, the facilitator will add constraints to the discussion:</p> <ul style="list-style-type: none"> <li>• The groups will need to generate ideas for every step in the innovation process (5 minutes)</li> </ul>	ENGLISH	A note taker in each group to record the ideas



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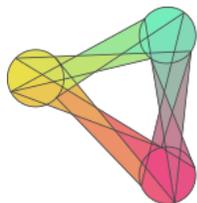
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			<ul style="list-style-type: none"> <li>The groups will need to generate ideas for address the key areas (e.g. open access, equality, sustainability). (10 minutes)</li> </ul> <p>The last five minutes the groups can discuss the ideas they have developed.</p>		
14.45	Where will industry sector X be in 10 years? Development of a future scenario	To generate a future scenario on the technology and knowledge developments in the field	<p>New groups will be formed. The groups will be formed from similar actors ie. Industries together, academics together etc. The final groups can be only defined after the tour de table session.</p> <p>The groups will develop a future scenario of the field using the Disney method. The groups will first act as “Dreamers” and dream where the field would be heading in 10 years, in an ideal case. The groups should focus on making an ideal scenario for future knowledge and technology developments, without focusing the role of RRI.</p> <p>After visioning the ideal future, the groups will act as “realists” and take a more realistic approach to the future and discuss the likely future developments in the field – taken the most relevant framework conditions, which will be screened on a wall. The groups will be fed in these key framework conditions.</p>	ENGLISH (WRITTEN MATERIAL)	LOCAL (GROUP WORK)



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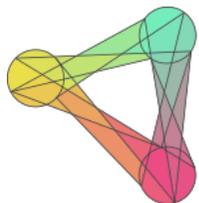
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			The groups should note down the future realistic future scenario.		
15.15	Assessing the sustainability of ideas from brainstorming	The ideas developed during the brainstorming session will be amended with responses to needs arising from anticipated technology and knowledge developments	<p>The groups from the brainstorming session will convene. Similar to the brainstorming session, the groups will be asked to brainstorm ideas, which will respond to the anticipated future needs of industries. The ideas will be written on post-its (different colour than in the previous session) and added among the ideas from the brainstorming session.</p> <p>Following the previous metaphor, this step will look at which additional components might be needed, which have not been proposed in the previous brainstorming session.</p> <p>Please note that, for this reason, the group members should not discard any ideas developed during the brainstorming session but only add new ideas responding the anticipated future needs. This is because the tool developed later should be agile and durable.</p>	ENGLISH (WRITTEN MATERIAL)	LOCAL (GROUP WORK)
15.30	Coffee Break				
16.00	Fast prototyping	To generate a quantity of ideas to develop a concrete tool for industries	The round two of the ideation is focused on generating ideas for a tool, which the industries can use. This tool should be kind of an umbrella for the different elements ideated during the brainstorming. The participants will be flashed some ideas on existing tools (see annex 4).	ENGLISH (WRITTEN MATERIAL)	A note taker in each group to



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# SMART·map

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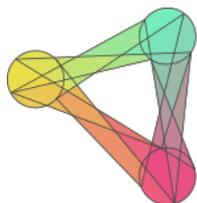
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			The fast prototyping works in a similar manner to brainstorming. All ideas will be recorded and nothing will be discarded. The groups should aim for a maximum quantity of ideas for a tool, without thinking about the practicality of a tool.	LOCAL (GROUP WORK)	record the ideas.
17.00	Closure of the Day 1			ENGLISH	
Agenda – DAY 2					
09.00-	Opening of Day 2		The local host will shortly wrap up the steps taken on day and introduce the agenda for the day 2	ENGLISH	
09.05	Harvesting the brainstorming and generating a solution	Selecting an idea for further development	<p>The groups will start the day by reflecting the ideas from the previous day's prototyping – the groups can group and discuss the ideas. The groups will need to choose one or some of the ideas from the previous day that they will want to develop further, or generate a completely new solution.</p> <p>In the end the groups will be asked to state aloud their idea. The participants are given an opportunity to change a group if they do not want to go forward with developing that idea.</p>	LOCAL	A note taker in each group to record the ideas
09.30	Building a solution	Prototyping a SMART-Map	The groups will need to build a physical prototype of the solution they have selected to prototype. A prototype can be anything: it can be a wall of post-it	ENGLISH (WRITTEN)	A note taker in



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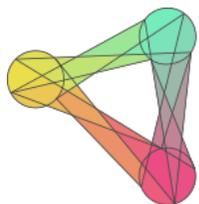
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	prototyping your idea		<p>notes, an assessment grid, a mock-up of a Facebook app or a website from cardboard, a role-playing activity, a space, an object, an interface, or even a storyboard. The groups are provided different kind of crafting material for building the mock up as well as input cards (with some information on the RRI dimensions/ aspects). The only requirements for the mock up are that:</p> <ul style="list-style-type: none"> <li>- it should contain all information that a user could use it only with minimal instructions</li> <li>- It should be tangible so that it can be put in the hands of a user.</li> <li>- It should contain some solutions for every part of the innovation chain</li> </ul>	MATERIAL ) LOCAL (GROUP WORK)	each group to record the ideas
10.30	Coffee Break				
11.00	Testing the tools	Collecting feedback and testing the tools developed in the previous session	<p>The groups will be conducted in two rounds. First, the groups will be given two fictional innovation stories and they can see if the tool can be applied to these two stories. The groups can do changes to the tool so that it becomes more general and is applicable to different kinds of industries ie. small, large, and multinational.</p> <p>The second round of testing will be by collecting feedback from other groups. This will be done in a world café format. The groups will have a presenter and the others will move a table to give feedback for the solution. The group giving feedback will be given a feedback formula Annex 5).</p>	ENGLISH (WRITTEN MATERIAL ) LOCAL (GROUP WORK)	Recording of discussion through feedback formats



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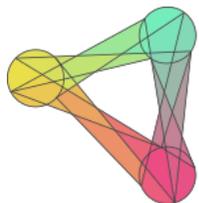
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11.30	Improving the tools		The groups will go back to their original tables and have ten minutes time to improve their prototype.	ENGLISH (WRITTEN MATERIAL) LOCAL (GROUP WORK)	A note taker in each group to record the ideas
11.45	Presenting the tools	Introducing the tools to a whole group	Each group will present their prototype (5 minutes per group). This will be done by the group circling from one table to another and the group collaboratively explaining the problem what the prototype wants to solve and the solution.	ENGLISH	Main points from presentations and discussions
12.15	Selecting a SMART-Map	Commonly selecting the most promising tool; the SMART-Map the workshop has created	After the group presentations, the participants can vote on the most promising tool. The tool with most votes will be selected as a "SMART-Map". In a plenary discussion, the group discusses which elements from the other developed tools could be merged with the selected SMART-Map.		
12.45	Closure of the Workshop		For the last 15 minutes of the dialogue, the participants will refocus their energy on thinking what they have learned in the 1.5 days.  Everyone is asked to think and write on the paper how will they do more	ENGLISH/ LOCAL	



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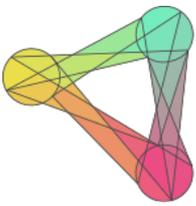
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			responsible innovation activities in the future. These papers will not be collected – the participants will be asked to save them and take them home.		
12.30	Lunch				



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## 3 Dialogue Event Resource Requirements

### 3.1 Dialogue Event Duration

Each industrial dialogue takes 1.5 days; including a working dinner, taking a total of 16 hours.

It is not beneficial to shorten the duration of the workshops from the intended 1.5 working days. In the workshop design, it has been taken into account that some stakeholders may be time constrained, particularly small- and medium-sized industries, and are only able to participate in the first day of the dialogue. However, all participants should be encouraged to attend to the full 1.5 day dialogue.

The organizers should have a clear picture before the event on the attendant numbers for each day so that the group sizes and compositions can be accommodated.

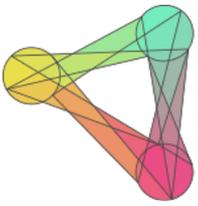
### 3.2 Dialogue Event Costs

Each local host is allocated a budget for organizing the industrial dialogues in the SMART-Map Project.

This budget should cover:

- expert travel and accommodation
- 2 lunches
- 3 coffee breaks (+ coffee/tee in the morning)
- 1 dinner
- water bottles (1 per participant/day)
- room rent if required
- printing costs if required
- A5 sized papers in 3 colours
- Flipcharts
- Prints of templates in A4/A3 size
- A1 Sized papers
- Print of innovation system model (A1)
- 30 Markers





- translation costs if required<sup>2</sup>

### 3.3 Dialogue Event Facility Requirements

In an ideal scenario, the facilities for the industrial dialogue should contain:

- One large room which fits a horseshoe formation (for 30 people) for plenary discussion and 6 small round table fitting 5-7 participants. Alternatively, the venue can contain two rooms – one for plenary discussions (horseshoe formation, 30 people) and one for group work (5-6 tables fitting 5-7 participants). Both rooms should be also include:
  - extra chairs
  - power point/video screening facilities and a canvas/wall
  - the group work area should include a flip chart for each group and one for facilitator (6 in total)
  - The plenary setting should include one flip chart for the moderator (1 in total). The flip chart should be placed in the front of the room.
- Separate area for lunch and coffee breaks. In an ideal case, the room for coffee break contains standing tables, which encourage continuing the conversation during the breaks. It is important that the participants can enjoy the breaks outside the working areas – in this way the spaces for active conversation are separated.
- Venue for working dinner (ie. a restaurant)

### 3.4 Dialogue Event Personnel Requirements

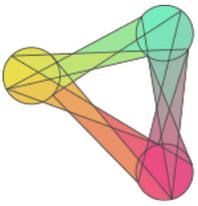
Planning the event

The local hosts are responsible for planning and organising the dialogues. Sufficient personnel resources should be in place for the planning and organisation of the event. An estimation of the working time required for each planning and organisation task is presented below:

- Early Planning: 1,5 PM
- Intermediate Planning: 0,5 PM
- Final Preparations: 0,5 PM

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<sup>2</sup> please check with your organization accounting if external translation costs are considered as subcontracting or other costs. Hosts can also opt for translating required material themselves



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- Reporting and Follow up: 0,5PM

### Delivering the event

The delivery of the industrial dialogue is a responsibility of the local host, who will be supported by the Centre for Social Innovation and other SMART-Map consortium partners. The successful delivery of the event requires the following personnel from the side of the local host:

- Facilitator – a person who is willing and capable of facilitating the plenary and group discussions with the representative from the Centre for Social Innovation.
- Organiser – a person who is responsible for technical issues, logistics, and answering for the practical questions of the participants.
- Clerk - one person, who will take notes on the plenary discussions and presentations. This person ensures that all written material will be collected and photographed during the event.
- 4 note takers – who will join from the afternoon of the first day to the end of the second day. They will take notes on the fast prototyping and development session.

In addition to the crew of local hosts, the project coordinator of SMART-Maps and one representative from ZSI will participate in each industrial dialogue event.

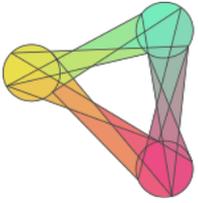
Other SMART-Map partners are invited to participate in at least one dialogue event. The participation of SMART-Map partners to events will facilitate learning on the organization and facilitation of the following industrial dialogue events. However, because the number of workshop participants is relatively small, only a limited number of SMART-Map partners should participate in each event not to disturb the group dynamic. The SMART-Map partners participating in the industry dialogue events will take a role of observers. The partners can take notes during the group discussions. Note takers who are fluent in the local language will be required, given that a large part of group discussions will be on a local language. The partners should intervene in group discussions as little as possible, however, if a group is not able to cooperate or the discussion becomes side-tracked, the partner can intervene and help the group back to more fruitful ground.

The facilitators can take a more active shaping role during the plenary discussions. By definition, a facilitator is "One who contributes structure and process to interactions so groups are able to function effectively and make high-quality decisions. A helper and enabler whose goal is to support others as they achieve exceptional performance." The facilitator will also ensure that "key questions" will be covered during the industrial dialogue and group work.



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### 3.5 Dialogue Event Material Requirements

The following material is required for the industrial dialogue:

- Agendas (1 per participant)
- Participant lists (1 per participant)
- A5 sized papers in 3 colours
- 1 Print of innovation system model (A1)
- Post its (2 colours)
- 8 Flipcharts
- Prints of annexed templates in A4/A3 size (1 per participants)
- A1 Sized papers (15 pieces)
- Blue tag
- Props for the design session including: glue, tape, paper in different colour, card board, tin foil, string, prints of key words, prints of innovation stories
- 35 Markers
- Stop watch
- A bell

#### Translation of Material

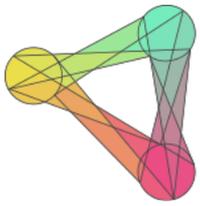
The main language of the workshop will be English. However, because fluency in English cannot be expected from participants of the workshop, parts of the workshop will be carried out in a local language. As a general rule, all plenary sessions will be hosted in English but during the group work and individual tasks the participants can communicate in a local language. All written material feeding towards plenary sessions will be in English, and the agenda will indicate which sessions will be done in English and which in local language.

It is suggested that during the group work sessions, the partners can communicate in their local language, which is more natural in a group situation, but they are asked to provide all written material in English. The only exceptions are the interviews conducted as a first group working activity, which can be also reported in a local language and the first grouping of the findings of the interviews.



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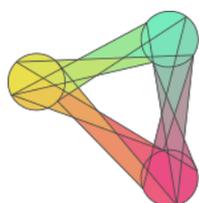
The material, which needs to be translated in local language includes:

- Invitation letter
- Agenda
- Templates in Annex 1 and 2
- Texts in Flipcharts



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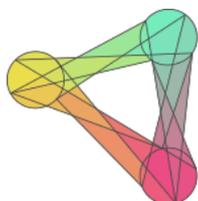


## 4 Planning the Industrial Dialogue

In the next sub-chapters, we will describe the steps that will need to be taken to ensure the successful delivery of an industrial dialogue event.

### 4.1 Early Planning

What?	When?	Detailed Information
List of potential participants/ selection of invitees	End of November 2016	<ul style="list-style-type: none"> <li>Based on the stakeholder maps, collect a list of approx. 100 stakeholders, including contact details, and forward to SMART-Map project coordination</li> <li>Select a tentative list of invitees (a larger pool taken that not all invited stakeholders are able to participate). The invitees should represent different stakeholder groups and be diverse in terms of gender, opinion and professional age.</li> </ul>
Confirm a date for the event	2-3 months before the event	<ul style="list-style-type: none"> <li>Ensure that there are no overlapping events on a selected date</li> <li>Ensure that the date suits to a planned keynote speaker</li> <li>Ensure that the date suits the majority of participants</li> </ul>
Arrange venue and catering	2-3 months before the event	<ul style="list-style-type: none"> <li>Venue large enough to fulfil the room requirements specified in chapter 2.3</li> </ul>
Arrange Accommodation	2 months before the event	<ul style="list-style-type: none"> <li>Accommodate participants close to the venue – if possible, all participants in the same hotel</li> <li>Be aware of the cancellation / group booking policies of the hotel.</li> <li>Note that you cannot claim the EC “no show” costs (only in case of medical reason when participant provides a note from a doctor)</li> </ul>
Recruit a key note	2-3 months before	<ul style="list-style-type: none"> <li>Contact the keynote speaker as soon as you</li> </ul>



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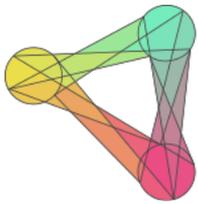
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speaker	the event	<p>have a tentative date.</p> <ul style="list-style-type: none"> <li>In an ideal case, the key note speaker is an expert in the field (e.g. from research sector, international organization) who is able to provide an overview of the developments in the field</li> </ul>
Arrange a Dinner Location	As early as possible	<ul style="list-style-type: none"> <li>Book a restaurant/venue for a working dinner, which accommodates 35 people. Take note of possible dietary requirements.</li> </ul>
Prepare invitation letter and communication material about the event to invitees	2 months before the event	<ul style="list-style-type: none"> <li>An official invitation letter has been prepared by the SMART-Map communication team (Annex 3). Please adapt the invitation letter and translate in local language if required</li> <li>Prepare information regarding the venue and accommodation</li> </ul>
Recruit/invite participants	2 months before the event	<ul style="list-style-type: none"> <li>Send invitation letters to key participants. In case of a positive reply/ no reply, please contact the invitees by phone. Note that industries might be difficult to contact directly and you might need to approach them through general e-mail address or phone number.</li> <li>Screen potential participants by doing a brief phone interview to find out whether they possess the necessary knowledge.</li> <li>Keep track on the recruitment process e.g. in Excel or Google Docs.</li> <li>You will need to prepare the participants to the industry dialogue. Please introduce participants to the SMART-Map project, and the aims of the industry dialogue.</li> </ul>
Confirmation e-mail		<ul style="list-style-type: none"> <li>Confirmation e-mail reminding participants to organize their own travel and explaining that</li> </ul>



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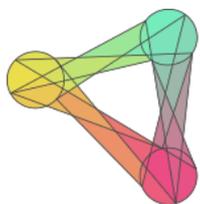
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		<p>accommodation will be organized by the local host.</p> <ul style="list-style-type: none"> <li>You can also consider setting up a survey, which gathers information about the arrival/departure of participants and their dietary requirements. This would serve as a tool to “confirm” participation</li> </ul>
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## 4.2 Intermediate Planning

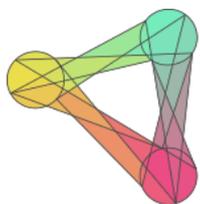
To do:	When?	Detailed Information
Prepare a final agenda	3 weeks before the event	<ul style="list-style-type: none"> <li>Adopt the draft agenda provided you by ZSI to timings (starting time, coffee, lunch breaks). Translate in local language if needed.</li> <li>Include the names of the key note and facilitators</li> <li>Include information about the dinner</li> </ul>
Prepare a logistics note	3 weeks before the event	<ul style="list-style-type: none"> <li>Prepare a logistics note containing information on how local transport and accommodation</li> </ul>
Prepare reimbursement guidelines		<ul style="list-style-type: none"> <li>Prepare reimbursement guidelines defining the reimbursement process and required templates</li> </ul>
Recruits staff internally for the event	3 weeks before the event	<ul style="list-style-type: none"> <li>Internally recruit 7 people (facilitator, organizer, clerk, 4 note takers)</li> </ul>
Send an information package to participants	2 weeks before the event	<p>Send the participants an information package containing:</p> <ul style="list-style-type: none"> <li>Agenda</li> <li>Logistics Note</li> <li>List of participants</li> </ul>



		<ul style="list-style-type: none"> <li>• Re-imbusement guide</li> <li>• Introduction to RRI</li> </ul>
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### 4.3 Final Preparations

To do:	When?	Detailed Information
Edit the innovation stories	1-2 weeks before the event	<ul style="list-style-type: none"> <li>• You will need to decide which innovation stories to use as input in which part of the workshop. Please note that this editing work is likely to take at least one working day</li> <li>• Discuss the use of innovation stories with ZSI</li> </ul>
Prepare presentation of the results of the baseline survey	1-2 weeks before the event	<ul style="list-style-type: none"> <li>• You will receive the results of the baseline survey from the University of Manchester. Familiarize yourself with the results and prepare a presentation highlighting the understanding the awareness, interest, and current practices on RRI (10 min)</li> <li>• Send the presentation to ZSI and SMART-Map coordination</li> </ul>
Print material for the event	1week - 2 days before the event	<ul style="list-style-type: none"> <li>• Agenda, participant list (1 per participant)</li> <li>• Innovation system (A1 size) – see if can be printed internally or in a print shop</li> <li>• Prints of annexed templates in A4/A3 size (1 per participants)</li> </ul>
Organise other material for the event	1 week - 2 days before the event	<ul style="list-style-type: none"> <li>• Flipboards (8)</li> <li>• Papers (A1,A3, A5)</li> <li>• Markers (1 per participant + extras for facilitators)</li> <li>• Props for design session</li> </ul>



Prepare nametags (clothes and table)	2 days before the event	<ul style="list-style-type: none"> <li>Print nametags to be set on a table and to pin to clothes</li> </ul>
Prepare all external speakers to the event	1 week – 2 days before the event	<ul style="list-style-type: none"> <li>Prepare the key note speaker to the event by explaining the scope of presentation and sending a presentation template</li> </ul>
Organise an internal meeting	1 week – 2 days before the event	<ul style="list-style-type: none"> <li>Prepare the moderator, speakers and note takers from the side of the local host and SMART-Map project. Include ZSI and SMART-Map project coordination in the meeting</li> </ul>

## 4.4 Workshop Days

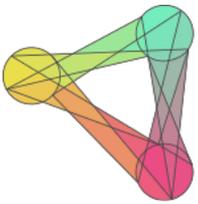
To do:	When?	Detailed Information
Arrange Rooms	1 day before the event	<ul style="list-style-type: none"> <li>Arrange tables to group work and horseshoe setting</li> </ul>
Arrange Nametags	2 hours before the event	<ul style="list-style-type: none"> <li>Arrange nametags in front of the room</li> </ul>
Arrange Agendas and participant lists	2 hours before the event	<ul style="list-style-type: none"> <li>Arrange the agendas and participant lists to the group work area</li> </ul>
Arrange Flipcharts	2 hours before the event	<ul style="list-style-type: none"> <li>Place flipcharts to the group work positions</li> </ul>
Set-up the technical facilities	2 hours before the event	<ul style="list-style-type: none"> <li>Test that the PowerPoint facilities work in the plenary and group work area</li> </ul>
Briefing of facilitators and helping staff	1 hour before the event	<ul style="list-style-type: none"> <li>Ensure that all staff is aware of their responsibilities and tasks during the day</li> </ul>

## 4.5 Support provided to local hosts during the planning by the Centre for Social Innovation

The Centre for Social Innovation will provide support to the local hosts throughout the industry dialogue preparation process. The support will include in terms of material:

- Draft Agenda to be sent to participants





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- Draft presentations to be used in the workshop
- Detailed organizational chart, which explains the timings, application of methodologies, practical moderation guidelines and logistical set-up of each session.

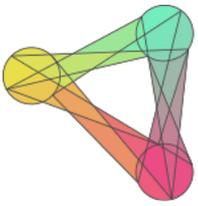
In terms of organization support, ZSI will support the local host before and during the event, through:

- Skype discussions to go through the workshop format step by step
- ZSI will arrive at the location one day earlier to go through last day organizational arrangements
- ZSI will provide facilitation support. The role of ZSI in the workshop facilitation will be discussed individually with each of the workshop organisers.



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## 5 Reporting and Follow-up

The aims of reporting the industrial dialogue are threefold:

- To facilitate learning of the SMART-Map partners, which ensures a smooth delivery of the consecutive dialogue events and a fit for purpose dialogue format;
- To capture the results of the dialogue events in terms of tools created to support industries in better inclusion of RRI in their innovation and business processes, and;
- To capture the effects of the industrial dialogues on participating organisations (ie. Institutional learning, attitude change).

Reporting and capturing the results in a standardised manner is important because of the number of institutions involved in the organisation of the dialogue events, post processing of concrete tools for support of industries, and creating a comprehensive overview on the effects of the industry dialogues. The standardised reporting requirements are introduced in the following sub-chapters.

### 5.1 Reporting to ensure learning of SMART-Map partners

The follow-up of the industrial dialogue events includes:

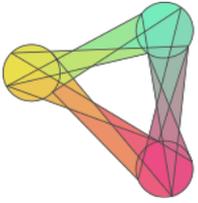
A post-event brief: A post event brief between the organisers to talk about the logistics arrangements, flow of the workshop, and the achieved outputs.

Sharing learnings from the events: The results of the post-event meeting should be shared with all project partners in writing (template in annex 7). In addition, the key points, at least from the first dialogue events, will be shared in a Skype meeting between the SMART-Map partners. It is also strongly recommended that the organisers of identical industrial dialogues organise a Skype-meeting to facilitate a sufficient exchange of experiences and to ensure that the events are organised and reported in a manner that enables comparability.

### 5.2 Reporting on the outputs of the industry dialogue events

The tools developed as a result of the industry dialogues will be piloted in the industries to support them in the use of RRI in their innovation and business processes. Therefore, the development and outline of the tools should be described in a comprehensive manner, using the template in Annex 8.

The reporting should utilise the material developed by the groups during the co-construction session. This includes the problem definitions, the ideas for prototyping and the developed prototypes. In addition, it is instructed to allocate one person from the organising staff to each group during the prototyping sessions who will write down the main points of the discussions leading to the development of the tools. It is also recommended that the finished tools are photographed.



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### 5.3 Capturing the effects of the industry dialogue events

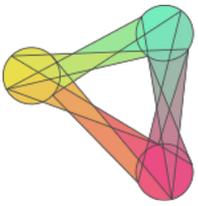
The participants to the event are a subject of an ex-ante and an ex-post evaluation. The ex-ante evaluation will be conducted through a “baseline survey” (task 7.1), which will explore the understanding and experiences of innovation stakeholders with RRI and dialogue participants expectations towards the dialogue events and the SMART-Map projects. The survey will be repeated for participating industries after the dialogue events. The survey will focus on capturing the learning effects and the changes in awareness, interest, desire, and action on RRI.

The University of Manchester is the organisation responsible for conducting the ex-ante and ex-post assessments.



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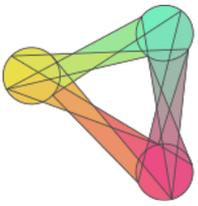
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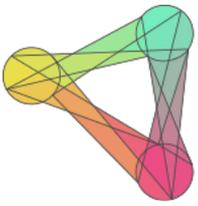
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## Annex 1: Theoretical Basis for Industrial Dialogues

The theoretical grounds for organising a multi-stakeholder dialogue to provide inputs for industries' innovation processes can be found in innovation theories. First, the discussions around sectoral and regional innovation systems have shown that alongside industries, academics, policy makers and civil society actors play an important role in the system leading to creation of innovations. Secondly, the theories of industrial innovation have emphasised the importance of interaction and flow of information between stakeholders to industries innovative capacities. Therefore, adoption of new information and learning becomes crucial for an organisation being able to innovate.

In the next sub-chapters we will introduce the innovation and organisational learning theories, which form the theoretical ground for industrial dialogues.

Opening up of the industrial innovation process

Understanding the industrial innovation at a firm level has evolved throughout the recent decades from simple linear models<sup>3</sup> to increasingly complex models embodying a diverse range of inter and intra stakeholders and processes.

Rothwell (1994)<sup>4</sup> documented five shifts or generations, demonstrating that the complexity and integration of the models increases with each subsequent generation as new practices emerge to adapt to changing contexts and address the limitations of earlier generations.<sup>5</sup> More recently and following on from the work of Rothwell's innovation generation model typology, it has been suggested that open innovation model<sup>6</sup> represent the latest wave of innovation models. Reflecting a dominant orientation to the preceding network models of innovation, the open innovation approach is not limited to internal idea generation and development, as internal and external ideas in addition to internal and external paths to market (licensing, insourcing etc.) are facilitated within the innovation development chain. In a similar vein, Enkel et al. (2009)<sup>7</sup> identifies three core processes that determine open innovation:

- 1) The outside-in process: involves enhancing and extending an enterprise's own knowledge base through the integration of suppliers, customers, and external knowledge sourcing.

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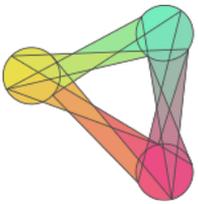
<sup>3</sup> From scientific discovery to technological development in firms and to market place following market push or pull strategy (see Rothwell 1994).

<sup>4</sup> Rothwell, R. (1994). Towards the fifth generation of innovation process. *International Marketing Review*, Vol 11 (1), pp. 7-31

<sup>5</sup> Ortt J. and P. van der Duin (2008). "The evolution of innovation management towards contextual innovation," *European Journal of Innovation Management*, vol. 11, no. 4, pp. 522-538

<sup>6</sup> Chesborough, H. (2003) *Open Innovation: The new imperative for creating and profiting from technology*, Boston: Harvard Business School Press, 2003

<sup>7</sup> Enkel E., O. Gassmann and H. Chesbrough (2009). "Open R&D and Open Innovation: exploring the phenomenon," *R&D Management*, vol. 39, no. 4, pp. 311-316.



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- 2) The inside-out process: refers to securing commercial/revenue benefits by bringing ideas to market faster than internal development via licensing IP and/or multiplying technology, joint ventures, and spin-offs.
- 3) The coupled process: combines co-creation with partners through alliances, cooperation, and reciprocal joint ventures with the outside-in process (to gain external knowledge) and the inside-out process (to bring ideas to market).

Indeed, the model whereby enterprises invest exclusively in research and development departments to drive innovation is eroding with the advent of open innovation. Contrasted to closed innovation, where innovation activities take place entirely within one firm, open innovation processes are characterized as spanning firm boundaries presenting opportunities to reduce risk and commercialize both external ideas and internal ideas externally.

Similarly, scholars<sup>8</sup> studying innovation at a local, regional, national or sectoral level have stressed the importance of information and technology flow among people, enterprises and institutions in the innovation process. The links and interaction between the stakeholders are needed to turn the idea to a market product.

In the innovation discourse, new knowledge and technologies are considered both central driving forces of national economies and sources of solutions to societal challenges.<sup>9</sup> This understanding has led to efforts to govern existing institutions of knowledge production and create platforms between stakeholders<sup>10</sup> and support their interaction.<sup>11</sup>

Building on these assumptions, the industrial dialogues will gather different stakeholders in the innovation process to discuss opening the industrial innovation process to external ideas; better inclusion of RRI.

Learning through interaction among heterogeneous stakeholders

A need of interaction between stakeholders is based on asymmetries between the insiders in technological development and outsiders. For example Collingridge (1980) has identified a dilemma of

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<sup>8</sup> See Lundvall (1985) for innovation systems

<sup>9</sup> e.g. Leitch S, Motion J, Merlot E, et al. (2013) The fall of research and rise of innovation: Changes in

New Zealand science policy discourse. *Science and Public Policy* 41: 119-130.

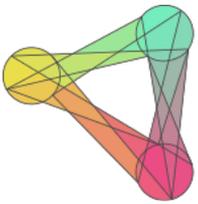
<sup>10</sup> Fochler, M (2016). *Beyond and between academia and business: How Austrian biotechnology researchers describe high-tech startup companies as spaces of knowledge production*, Pre-print; Published by the Department of Science and Technology Studies, University of Vienna, January 2016. Available at <http://sts.univie.ac.at/publications>

<sup>11</sup> for triple/quadruple helix model see eg. [http://triplehelix.stanford.edu/3helix\\_concept](http://triplehelix.stanford.edu/3helix_concept)



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knowledge and control: the difficulty to intervene in technology development processes in a constructive manner in early stage as there is little known about possible impacts and when there is more knowledge, it may be too late. Rip et al (1995) have shown that this dilemma is part of a stabilized regime and build-in asymmetry between those who are engaged in technology development and those who will be impacted by the technology and industrial innovation.

This asymmetry between actors offers a starting point to creation and orchestrating space,<sup>12</sup> where productive interactions and inter-organisational learning can take place. While innovation theorists commonly agree on the importance of learning as preconditions for successful innovation process,<sup>13</sup> the organisational theorists suggest that learning takes place in practice in interaction: "Learning processes in practice take place not only 'in action', but also (...) most notably, in interaction, both with others and with the context of a problem situation."<sup>14</sup> Indeed, the idea that interaction between people with different perspectives can lead to the emergence of new insights is generally accepted.<sup>15</sup>

Paradian (2012)<sup>16</sup> has argued that the concept of "learning by anticipation" can be used to understand the learning happening in events bridging views of stakeholders. Learning by anticipation involve on: reflexive articulation, learning about each other, and learning about dynamics at the collective level. In reflexive articulation different arguments and points of views in relation to a specific issue or dilemma are considered which will help individuals to come to a more reasoned decision about action alternatives. Learning about each other happens between individuals that are not too close in terms of cognitive proximity. Through probing each other's realities actors make explicit, to themselves and to others, future roles and responsibilities. The third dimension is 'learning about dynamics at the collective level.' Such learning is not just cognitive, but also reflexive: about recognition of the context in which one is embedded and one's role in co-evolution at the collective level.

A final question about the learning that may occur is whether it is learning that improves current approaches and practices, or whether these approaches are transformed through the learning.

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<sup>12</sup> Rip, A. & P.B. Joly (2004). **Multi-Actor Spaces and the Governance of Science and Innovation in the ERA, PRIME Network of Excellence, Workpackage 2**

<sup>13</sup> Innovation studies literature has identified different types of learning in the process of industrial innovation and technology development: learning by searching (Nelson and Winter 1977, Nelson and Winter 1982; Garud 1997), learning by doing (Arrow 1962), learning by using (Rosenberg 1982) and learning by interacting (Andersen and Lundvall 1988) and learning in inter-organisational networks<sup>13</sup> (Powell, Koput, & Smith Doer 1996).

<sup>14</sup> Loeber, A., Van Mierlo, B., Grin, J., and Leeuwis, C. (2007): **The Practical Value of Theory: Conceptualizing learning in pursuit of sustainable development.** Chapter 3 (p. 83-97) in Wals, A and Van der Ley, T. (eds.): **Social Learning towards a sustainable world.** Wageningen, Wageningen UP.

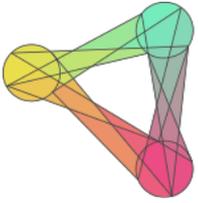
<sup>15</sup> e.g. Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P., and Trow, M. (1994): **The new production of knowledge.** London: SAGE Publications Ltd.

<sup>16</sup> Paradian, A (2012). **Constructive TA of newly emerging technologies stimulating learning by anticipation through bridging events.** . 332 p.



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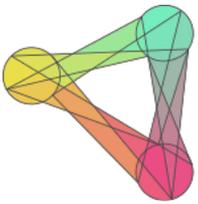
Organisational theorists Argyris & Schön (1978) have argued that two kinds of learning takes place in organisations; single loop learning (mistakes are corrected by using a different strategy or method that is expected to yield a different successful outcome) and more complex double loop learning (changes in norms, values and most importantly goals and procedures which govern the decision making processes and action of organizations).

Building on these theories, the industrial dialogues want to encourage organisational learning to affect the asymmetries between technology developers and outsiders, and encourage so called double looped learning through interaction.



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## ANNEX 2: Methodological basis for Industrial Dialogues

The following interactive group work methods will be utilised in the delivery of industrial dialogues. The selected methods stem from the key aims of the dialogue building blocks.

### Inclusion

The inclusion block aims at:

- Levelling out the knowledge of the participants with regards to the state of play in the industry field and RRI (session “welcome”)
- Creating an informal atmosphere (session “welcome”)
- Building an understanding of industries RRI experiences and employment of RRI in the field (session “RRI in the industry field”)
- Understanding the challenges and opportunities with regard to employment of RRI in the field (session “RRI in the industry field”)

The inclusion block is comprised of two sessions of which the first (“welcome”) aims to address the former two aims and the second session “RRI in the industry field” the two latter aims.

The first session utilises so called “card games” as a group working method to warm up the participants to the group work and create an informal atmosphere for the dialogue. The second session will start the design thinking process, with understanding the user needs and experiences (in this case industries experience with RRI).

### Description of Methodology

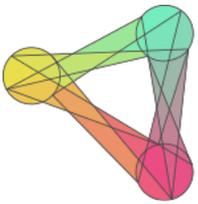
#### Card Game:

Different games can be utilised to energise groups and for team building. A card game, in which the participants are invited to write on their experiences with SSH collaboration, was used to prepare and “warm up” the workshop participants to group work methods applied later during the workshop.

### Vision

After the inclusion block has created a common understanding on the previous experiences and current needs of industries, the vision block will focus on exploring how the future technology changes will affect the needs of the industries. Therefore, the aims of the vision block are:

Discuss anticipated future knowledge and technology developments in the industry field



The session dedicated to visioning build on foresight methodology, and aim at designing future scenarios. The session utilises the Disney method and back casting as interactive methodologies of foresight thinking.

## Description of Methodology

### Scenarios

Scenarios<sup>17</sup> are built up from collective visions of the future by a group of experts and should help decision-makers and other stakeholder groups to simplify “the avalanche of data into a limited number of possible states”.<sup>18</sup> Scenario building efforts often start with the clarification of the setting, the identification and analysis of driving forces (‘drivers’) that are considered to influence how the present will be transformed in the future in specific areas of interest, and a subsequent forecasting and importance ranking of the identified drivers as well as of uncertainties that become apparent during the process. Then, the scenario logics are defined, scenarios fleshed out and their implications discussed.<sup>19</sup> Thus, generic scenario building exercises comprise an exploratory elaboration of several futures.

In addition to exploratory scenario building processes resulting in multiple scenarios, another approach is outlined in literature; a success scenario method.<sup>20</sup> Therein, an effort is made to present an image of a desirable condition in form of one single scenario in order to help decision-makers reflect the current situation and identify crucial steps in view of a favourable future. A related scenario building exercise can then be used by decision makers to streamline their approach to the topic in question. As Vincent-Lancrin has put it: “Future scenarios do not aim to predict the future [...] but merely aim to provide stakeholders with tools for thinking strategically about the uncertain future before them, which will be partly shaped by their actions and partly by factors beyond their control”.<sup>21</sup> This “singular scenario” approach is also useful when it comes to structuring and guiding discussions so that underlying assumptions become clear and can be explicated.<sup>22</sup>

Disney Method<sup>23</sup>:

<sup>17</sup> The description of scenario building methodology is an adaptation of the description of scenario based foresight methodology used in New INDIGO International S&T Cooperation Foresight (2012). A study of S&T cooperation future(s) between Europe and India

<sup>18</sup> Schoemaker, Paul J.H. (1995): Scenario Planning: A Tool for Strategic Thinking, in: Sloan Management Review, 36(2), p. 27.

<sup>19</sup> IPTS/Joint Research Centre of the European Commission (2007): Online Foresight Guide. Scenario Building, online at:

[http://forlearn.jrc.ec.europa.eu/guide/3\\_scoping/meth\\_scenario.htm](http://forlearn.jrc.ec.europa.eu/guide/3_scoping/meth_scenario.htm), most recent access date: 30 March 2015

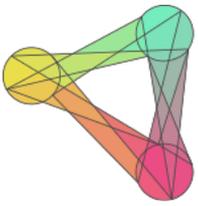
<sup>20</sup> Miles, Ian (2005): Scenario Planning, in: UNIDO Technology Foresight Manual. Volume 1 – Organization and Methods, 168-193.

<sup>21</sup> Vincent-Lancrin, Stephan (2009): What is Changing in Academic Research? Trends and Prospects, in: OECD (ed.): Higher Education to 2030. Volume 2. Globalisation, OECD: Paris, p. 173

<sup>22</sup> Miles, Ian / Green, Lawrence / Popper, Rafael (2004): FISTERA WP4 Futures Forum. D4.2 Scenario Methodology for Foresight in the European Research Area, European Communities: Brussels.

<sup>23</sup> Van Vliet, V. (2012). Disney method (Dilts). Retrieved 24.09 from ToolsHero: <http://www.toolshero.com/disney-method>. More about Disney method: Capodagli, B., Jackson, L., Hammond, J. S., Keeney, R. L., & Raiffa, H. (1999). The Disney Way. Audio-Tech Business Book Summaries;





The Disney Method, developed by Robert Dilts in 1994, is a complex creativity strategy in which a group uses four specific thinking styles in turn. It involves parallel thinking to analyse a problem, generate ideas, evaluate ideas, construct and critique a plan of action. The four thinking styles are - outsiders, dreamers, realists and critics. The method was adapted to the needs and available time resources of the JLW. Three thinking styles were thus applied for the purpose of scenario building.

**Dreamers:** the dreamer is not hindered by strait-jacketing, but is creative and imaginative and sees limitless opportunities.

**Critic:** the critic questions the plans of the dreamer or the insight of the realist, but also looks at a plan like an observer and filters out and removes all crucial mistakes

**Realist:** the realist looks at the practical possibilities to find out whether an idea is really feasible. The realist looks at aspects such as the available amount of means and time.

Back casting<sup>24</sup>

The term "back casting" was coined by Robinson (1982) as a futures method to develop normative scenarios and explore their feasibility and implications. It became important in the sustainability arena and is often used as a tool to connect desirable long term future scenarios (50 years) to the present situation by means of a participatory process. Back casting is used in complex situations with many stakeholders where a desired future vision is available, but where it is unclear how to reach it. It leads to roadmaps for implementation of the actions needed and participation is an essential feature. It can be characterised as a social learning process and the long term perspective makes it possible to let go of the present way of meeting certain specific social needs.

Co-creation

The co-creation block aims to explore ideas to address the industries' needs, harvesting these ideas and selecting the most potential ones to be developed further. The co-creation block aims at:

Creating ideas to respond industries needs with regard to better inclusion of RRI (Fast prototyping session 1 and 2)

Developing a concrete tool to businesses in inclusion of RRI in innovation and business processes in the specific industry sector (prototype development and testing -sessions)

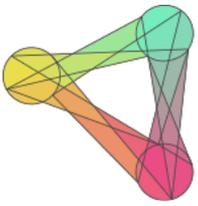
Although design thinking is introduced here as a method for co-construction, the foundations of the whole dialogue can be found on design thinking, as it and the industrial dialogue format emphasise

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Dilts, R. (1995). *Strategies of genius (Vol. 3)*. Meta Pubns; Imagineers (Group). (1996). *Walt Disney imagineering: a behind the dreams look at making the magic real*. Disney Editions.

<sup>24</sup> [http://forlearn.jrc.ec.europa.eu/guide/4\\_methodology/meth\\_backcasting.htm](http://forlearn.jrc.ec.europa.eu/guide/4_methodology/meth_backcasting.htm) More about Backcasting: J. Robinson, Energy backcasting: a proposed method of policy analysis. *Energy Policy* 10 4 (1982), pp. 337-344.; J. Robinson, Future subjunctive: backcasting as social learning, *Futures*, Volume 35, Issue 8, October 2003, Pages 839-856.





understanding of the customer needs and experiences, and employ divergent thinking to explore a number of possible solution and converged thinking to narrow down the ideas to a final solution.

## Description of Methodology

Design thinking:

The notion of design as a way of thinking traces back to the 1970s.<sup>25</sup> Design thinking refers to “design-specific cognitive activities that designers apply during the process of designing” or “design thinking as a method for creative action”. Design thinking is a formal solution-orientated method for practical, creative recognition and resolution of problems.

Design thinking employs divergent thinking as a way to ensure that many possible solutions are explored in the first instance, and then converged thinking as a way to narrow these down to a final solution. The divergent thinking stage often involves brainstorming or fast prototyping to develop a quantity of ideas and a converged thinking prototyping and feedback gathering to narrow down the ideas. The benefit of design thinking is that it reduces fear of failure in the participants and encourages input and participation from a wide variety of sources in the ideation phases.

The industrial dialogue follows the Stanford school understanding of design thinking process,<sup>26</sup> which is comprised of five consecutive steps:

Empathise: Understanding user’s needs facilitates solutions that are not only feasible and viable, but – most importantly – wanted.

Define: After understanding the user needs, it is important to approach the design challenge from a specific point of view.

Ideate: Ideation focuses on generating a quantity of ideas rather than quality of ideas, and encourages to out of the box thinking.

Prototype: Prototyping the ideas will help to gather additional user feedback and better interact with the user without investing a lot of time to the development process.

Test: In order to innovate beyond what already exists, you have to test and experience an idea to find its true value and functionality

In these linear steps, the problems can be framed, a diversity of solutions brainstormed and the developed solutions tested.

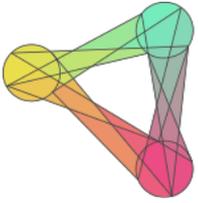
World Café<sup>27</sup>:

The “World Café” is a structured conversational process intended to facilitate open discussion, and link ideas within a larger group

<sup>25</sup> About the early uses Simon, H. (1969). *The Sciences of the Artificial*. Cambridge: MIT Press.; McKim, Robert (1973). *Experiences in Visual Thinking*. Brooks/Cole Publishing Co; and for later approaches to design thinking e.g. IDEO (<https://designthinking.ideo.com/>)

<sup>26</sup> There are also other similar process models e.g. [Simon, Herbert](#) (1969). *The Sciences of the Artificial*. Cambridge: MIT Press

<sup>27</sup> <http://www.theworldcafe.com/key-concepts-resources/world-cafe-method/> More about the World Café methodology Juanita Brown and David Isaacs (2005). *The World Café: Shaping Our Futures Through Conversations that Matter* Berrett-Koehler, 2005.



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**Small Group Rounds:** The process begins with a first of two rounds of conversation for small groups seated around a table. At the end of the given time, each member of the group moves to a different new table. They may or may not choose to leave one person as the “table host” for the next round, who welcomes the next group and briefly fills them in on what happened in the previous round.

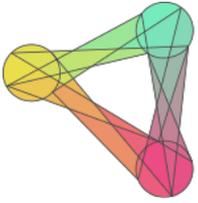
**Questions:** each round is prefaced with a question crafted for the specific context and desired purpose of the World Café.

**Harvest:** After the small group work, individuals are invited to share insights or other results from their conversations with the rest of the large group. These results are reflected visually in a variety of ways, most often using [graphic recording](#) in the front of the room.



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## ANNEX 3: Invitation letter to industrial dialogue events

Dear XX

On behalf of the SMART-map project, we have the pleasure to invite you to participate in our Industrial Dialogue event – a workshop on the responsible development of synthetic biology to be held in Manchester on 14/15 December.

You are a relevant actor in the synthetic biology field and we would very much appreciate your participation in this event – a key step in our effort to help European industries address the questions of social and environmental responsibility they face in their innovation processes.

The SMART-map project is funded by the European Commission, and aims to help innovative industries integrate elements of responsible research and innovation in their pipeline – a topic on which regulators and funders are placing ever greater emphasis. Innovators may soon be expected to prove that they have addressed issues such as social impact or open data in their processes. SMART-map will design and test tools to help companies do that in a smooth and efficient way, and to make sure that citizens have their say on the development of new technologies.

To this aim, the project organizes a series of “Industrial Dialogues”, where representatives from industry and civil society from different European countries meet, and contribute to the preparation of a smart map: a list of actions and concrete steps that innovators can take in order to assure that their work comply with responsibility principles.

By joining the Manchester event, you will make your voice heard in the design of a tool aimed at innovators in the synthetic biology field, and will make sure it fits your – or your organization’s – needs. You will also become part of the community the project is building: industry, research and civil society representatives from all across Europe with whom you share a professional interest in synthetic biology, and with whom you will get in touch, exchange views and create networks.

A member of our team will contact you within the next few days by telephone to ask if you, or another more appropriate person in your organization, would be happy to participate in the event.

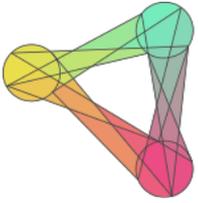
Looking forward to your response

XX



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## ANNEX 4: Template for collecting Industries RRI experience

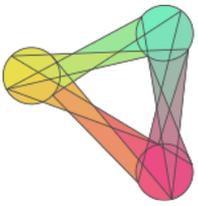
Material prepared in the previous EU-funded projects will be utilised in the preparation and delivery of the industrial dialogue events:

Material introducing RRI

- RRI for Business and Industry (RRI Tools): <https://www.youtube.com/watch?v=FZhsvxmq8X4> and <http://www.rri-tools.eu/business-and-industry>
- How to apply Responsible Research and Innovation in Industry – an interactive guide (Responsible Industry): <https://www.youtube.com/watch?v=ZOGnZr6Kilg>
- Responsible Research and Innovation: aligning R&I with European society (DG Research and Innovation): <https://www.youtube.com/watch?v=bs5A-4j5h-I>

Material for developing a tool to support RRI process

- Responsibility Navigator (Resagora): <http://responsibility-navigator.eu/>
- Responsible Innovation Criteria (Karim): <https://drive.google.com/file/d/0B3bFETjFd-KJbTRvLUX2ZTFoOUk/view>
- Capital System Methodology (Transition): <http://transitionproject.eu/wp-content/uploads/2013/11/SIJ-TOOLS.pdf>



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## ANNEX 5: Template for collecting Industries RRI experience

Re-design the RRI experience for... industry X – start by gaining understanding on previous RRI experiences

INTERVIEW 1:

Type of organisation:

1 First round of interview (4 minutes)

2 Dig Deeper (4 minutes)

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INTERVIEW 2

Type of organisation:

1 First round of interview (4 minutes)

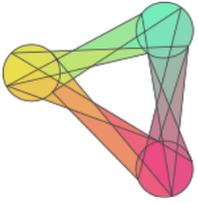
2 Dig Deeper (4 minutes)

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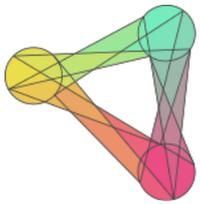
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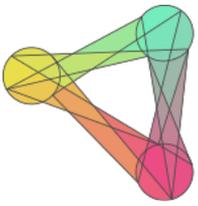
## ANNEX 6: Feedback Formula

What worked?	What could be improved?
Questions?	Ideas?



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## ANNEX 7: Post-Event Reporting Template

Post-event reporting template

Invitation process and logistics

1. What was the total number of participants to the event? Please attach the attendance list.
2. How did the list of participants deviate from the suggested share of participants? Why?
3. Did you experience any issues with inviting participants to the industrial dialogue events? Did you experience any issues with briefing the participants to the event? Please include here the remarks that could help other SMART-Map partners in planning the future dialogue events
4. Did you experience any issues with the overall logistics arrangements of the event? Please include here the remarks that could help other SMART-Map partners in planning the future dialogue events.

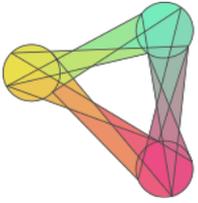
The industrial dialogue event

1. How did the event agenda and methodologies deviate from the suggested general agenda? Why?
2. Was the timing of the sessions fit for purpose?
3. Did you experience any issues with the introductory presentations (Smart-Map, RRI)? Did you have the feeling the participants understood the purpose of the event and the overall concept of RRI?
4. Did you experience any issues with the first group work sessions exploring the participant RRI experiences, defining the needs, challenges opportunities and problem statements? Please include here any tips you find useful for inclusion of the participants.
5. Did you experience any issues with fast prototyping sessions 1 and 2?
6. Did you experience any issues with the scenario development and back casting sessions?
7. Did you experience any issues with the selection of an idea for further development and prototyping?
8. Did you experience any issues with testing the solutions session?

Other

1. Do you have any other comments on the overall flow of the event?





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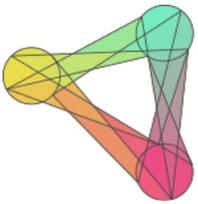
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2. Do you think that you managed to capture the main results of the event?
3. Do you think that the event was pitched on a right level compared to the background of the participants?
4. Any other comments?



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## ANNEX 8: Reporting the results of the Industry Dialogue

### The role of RRI in the industry field

Please report the main points from each group presentation and synthesise the plenary discussion (session “Group presentations and a plenary discussion on RRI dimensions”). Please highlight any common views or conclusions made during the discussion.

1. The understanding of industries on RRI?
2. Industries previous RRI experiences?
3. The challenges and needs of industries with relation to employing RRI? Please report here group by group the identified challenges and needs. Were there any overarching issues or was there any common view on the main challenges and the needs?

### The future developments in the industry field

Please report the main points from each group presentation and synthesise the plenary (session “The implications of new developments in the field to RRI”). Please highlight any common views or conclusions made during the discussion.

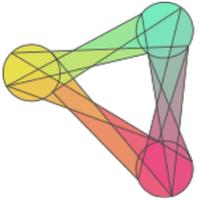
1. What are the key future knowledge/technology developments impacting the industry field?
2. What implications are these developments likely to have on RRI?

### The tools created to support industries in employing RRI

The tools created are the main result of the workshop and will be piloted in industries. The ideation and development of the tools should be reported comprehensively. The aim is to capture the multitude of ideas as well as to record in detail the ideas developed further during the co-construction.

1. Please collect and list all ideas developed during the fast prototyping session 1 and 2. Please mark the ones, which the groups were interested in developing further. Please also mark which need or challenge the idea responds. You can use in your reporting the table below:

Idea	Details of the idea	Need it addresses	Interest to develop the idea further



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2. Please collect information on all ideas selected for further development. Please make a short "case study" from each idea, in which you address the following topics.
  - Explain the main idea
  - Explain the need the idea responds
  - Include a picture of a prototype
  - Explain the main feedback to the idea
  - Explain the discussion about the idea
3. Please conduct a short meta-level analysis of the ideas, addressing the following questions:
  - Were there any common challenges or needs that the ideas aimed to address
  - Did the ideas take any common approaches to addressing the problems? Were there common features on the prototypes to be recognised?
  - Did the group as a whole value the different prototypes? Were some prototypes assessed to be more fit-for-purpose than others?



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