



Project acronym: Res-AGorA  
Project full title: Responsible Research and Innovation in a Distributed Anticipatory Governance Frame. A Constructive Socio-normative Approach  
Project number: 321427  
Programme: Seventh Framework Programme for research and technological development  
Objective: FP7 SiS.2012.1.1.1-1: Governance frameworks for Responsible Research and Innovation (RRI)  
Contract type: Collaborative project

## Deliverable D2.4

### Functional specification canon

Submission date: 30.09.2014  
Author(s): Morten Velsing Nielsen & Bjørn Bedsted  
Deliverable No.: D2.4 (Work package number: WP 2)  
Deliverable nature: R (Dissemination level: PU)  
Document version: version 1

## Content

|  |           |
|--|-----------|
| <b>Res-AGorA – A brief project overview .....</b>        | <b>3</b>  |
| <b>Partners and contact information .....</b>            | <b>4</b>  |
| <b>1. Purpose .....</b>                                  | <b>5</b>  |
| <b>2. Target groups.....</b>                             | <b>6</b>  |
| <b>3. Specifications for the framework products.....</b> | <b>9</b>  |
| <b>4. How to support governance of RRI? .....</b>        | <b>11</b> |
| <b>5. How could actors use the framework?.....</b>       | <b>13</b> |
| <b>6. Summing up .....</b>                               | <b>13</b> |
| <b>7. references.....</b>                                | <b>14</b> |

## **Res-AGorA – A brief project overview**

The EU seeks to become a genuine Innovation Union in 2020 striving for excellent science, a competitive industry and a better society without compromising on sustainability goals as well as ethically acceptable and socially desirable conditions. Europe thus needs to develop a normative and comprehensive governance framework for Responsible Research and Innovation (RRI). This is the major goal of Res-AGorA.

The Res-AGorA framework will build on existing RRI governance practices across and beyond Europe. It will be reflexive and adaptable to enable the inherent tensions in all governance of RRI to be actively addressed by procedural means aiming to facilitate constructive negotiations and deliberation between diverse actors.

The project will achieve these objectives through a set of work packages providing an empirically grounded comparative analysis of a diverse set of existing RRI governance arrangements and their theoretical/conceptual underpinnings across different scientific technological areas (WP2 and WP3), a continuous monitoring of RRI trends and developments in selected countries (WP5) and, based on the cumulative insights derived from these work packages, co-construct with stakeholders the central building blocks and procedures of an overarching future governance framework for RRI (WP4).

This governance framework will deliver cognitive and normative guidance that can be applied flexibly in different contexts. Res-AGorA will thus have direct impact on RRI practices (science, industry, policy), and strategic impact in terms of the political goals (Horizon 2020) and competitiveness (Lead Market through growing acceptance of new technologies).

Res-AGorA will ensure intensive stakeholder interaction and wide dissemination of its tangible and intangible outputs in order to maximise impact, including comprehensive and interactive stakeholder engagement, liaisons with other ongoing RRI activities funded by the SIS Work Programme, and a final conference.

## Partners and contact information

**1/Fraunhofer** Fraunhofer Institute for Systems and Innovation Research, Germany

Contact person: Prof. Dr. Ralf Lindner  
[Ralf.Lindner@isi.fraunhofer.de](mailto:Ralf.Lindner@isi.fraunhofer.de)

**2/UT** University of Twente, Netherlands

Contact person: Prof. Dr. Stefan Kuhlmann  
[S.Kuhlmann@utwente.nl](mailto:S.Kuhlmann@utwente.nl)

**3/UNIPD** University of Padua, Italy

Contact person: Prof. Dr. Elena Pariotti  
[Elena.Pariotti@unipd.it](mailto:Elena.Pariotti@unipd.it)

**4/DBT** Danish Board of Technology, Denmark

Contact person: Bjørn Bedsted  
[bb@tekno.dk](mailto:bb@tekno.dk)

**5/IHS** Institut für Höhere Studien, Austria

Contact person: Dr. Erich Griessler  
[Erich.Griessler@ihs.ac.at](mailto:Erich.Griessler@ihs.ac.at)

**6/UNIMAN** University of Manchester, UK

Contact person: Prof. Dr. Jakob Edler  
[Jakob.Edler@mbs.ac.uk](mailto:Jakob.Edler@mbs.ac.uk)

**7/AU** University of Aarhus, Denmark

Contact person: Dr. Niels Mejlgaard  
[NM@cfa.au.dk](mailto:NM@cfa.au.dk)

**8/UPEMLV** Université Paris-Est Marne-la-Vallée, France / IFRIS

Contact person: Prof. Dr. Pierre-Benoît Joly  
[joly@inra-ifris.org](mailto:joly@inra-ifris.org)

## 1. Purpose

The purpose of the framework specifications is to define rules of the game for the further work towards a governance framework for RRI. This paper will therefore define concrete guidelines for the Res-AGorA project, such as who the relevant actors are, how the final framework can be used, and what it will look like?

The functional specification canon will set the frame for work package 4 where the governance framework for RRI will be developed and discussed in 5 stakeholder workshops. The framework specifications will supplement the theoretical work already done with more practical specifications to guide work package 4. It should be seen as a supplement to deliverable 2.3 and 3.5, which also provide input for the content of the WP 4 workshops and the framework being built in task 4.1 of the Res-AGorA project.

The document is based on desk top research of existing governance frameworks, observations from the empirical work, the theoretical work, internal discussions, as well as a stakeholder workshop held in Copenhagen May 2014. In the workshop stakeholders were presented with the first ideas for how to develop the governance framework, and the preceding discussion has played a central role in shaping this document. This workshop also played a key role in defining target groups for the project.

The governance framework should provide guidance for actors in the defined target groups for analysing and understanding governance situations related to RRI; strategic considerations which can assist actors in governing RRI; and in-depth examples of previous experiences with similar situations. It gives suggestions for how exactly to do this, but since the framework is a work in progress, final specifications cannot be made at this stage, and they will be adapted as the project moves on, including additional insights and ideas.

Copenhagen 30-09-2014

## 2. Target groups

For the Res-AGorA governance framework to gain practical relevance it is essential to identify clear target groups and develop a thorough understanding of their incentives for working with responsible research and innovation. The definition of target groups is also important to the definition of the scope of the final framework. Defining the scope of a governance framework for RRI is clearly a challenging job as responsible research and innovation takes place in a multi-level governance situation (see Lee, 2012, p. 114; Fisher & Rip, 2013). However some key governance challenges can be defined: setting priorities, defining policies, and developing evaluation and assessment tools. The actors involved in such tasks play a crucial role in mediating between levels of the innovation system by bringing together different actors and different interests as well as defining the framing for the practical implementation of governance instruments. In other words, these actors create and redefine spaces for deliberation between actors at different levels of governance. These actors are the main target group of the project. Actors at this level not only have the capabilities to think strategically about responsible research and innovation, but also have a clear interest in developing skills in this area. The existing work of research councils to implement responsible research and innovation into funding decision-making is one out of several examples of this interest (e.g. Owen & Goldberg, 2010). See also the analysis of the case studies (D 3.5 page 33) for further thoughts on the selection of actors at this level as the main target groups.

The figure shows a way of structuring actors of the research and innovation system. While some organisations fit within one main role other others will cover many different roles. The Res-AGorA framework will target actors, whether whole organisations or sub-divisions within organisations, which focus on the two middle roles; policy makers and research funders.

The monitoring of Res-AGorA has shown the diversity of institutions in which such decisions are carried out in different countries. This creates a challenge when trying to define very specific target groups, and it is therefore essential that the final framework can be understood by actors in very different organisations, while at the same time being illustrative to specific governance challenges. Underneath the specific target groups are spelled out.



**Intergovernmental organisations:** Intergovernmental organisations play a crucial role in sharing knowledge and best practices across countries and are therefore an important target group of the framework. Examples of relevant organisations are **FAO, OECD, IEA, ISO** and **World Economic Forum**.

**Policy makers:** This broad category contains some of the main target groups of the framework. It contains politicians, as well as other organisations central to policy making within research and innovation such as **parliament**, and **government institutions**. However the two main policy maker target groups are the **European Commission** and **National politicians**. A main challenge for national policy makers is balancing interests and assessing knowledge claims as well as developing hard and soft regulation. The EC play a central role on a European level as policy makers and funding organisation for research and innovation. Their support is essential for the development of a governance framework for RRI, as shown by the work with implementing RRI Horizon 2020.

**Research funding organizations:** Research funding organisations is the other key target group for the framework. Research funding organisation consists of both **public research councils** and **private research foundations**. Their responsibilities include providing funding for research and innovation, providing funding for PhD education, supporting activities between science and society, as well as giving researchers access to research infrastructure. All of these tasks present challenges when it comes to setting priorities, defining policies, and developing assessments. Like universities companies cover a range of roles when it comes to research and innovation. We target companies who both play a role in the long term building up of capacities and capabilities, while also be involved in short term change processes related to responsible research and innovation.

**Research and innovation performers:** Research and innovation performers include **Higher education institutions**, other **public research organisations**, and **private research institutions**. The actual performers of research and innovation are not a target group for the framework, as the framework concerns the governance of research and innovation. However such institutions also include several governance levels, where important decisions on the conditions for research and innovation are taken.

**Expert bodies:** The development of governance instruments to steer responsible research and innovation often take place in expert bodies. The composition of such bodies differs in different countries, but some key examples include **accreditation institutions**, **technology assessment institutions**, and **ethical councils**.

**Advocacy groups:** A number of industry, business, and consumer organisations are responsible for promoting the interests of actors on different governance levels. Their responsibilities include policy advocacy, advising members, and the creation of networks. Examples of such groups include **Industry associations**, **professional organisations**, **trade unions**, and **think tanks**.

**CSO's (or NGO's):** The overall debate on responsible research and innovation is important to set the agenda that actors work within. Most both national and international organisations are involved in this debate, and the media play an important role shaping the debate. For NGO's and lobby organisations this is their main role. It is not the purpose of the Res-AGorA framework to intervene in this public debate. Therefore NGO's and lobby organisations will not be target groups for the framework in their role as agenda setters, yet it will speak to the work

these groups do when acting as policy makers. In this regard organisations working with consumer, environmental, trade and health are especially relevant for Res-AGorA.

A framework for responsible research and innovation should be clear about when the considerations presented in such a framework should be applied. Organisations have to react and reorganise according to numerous events; some internally decided upon, others due to external pressure. When targeting these groups examples of such situations could be long-term planning, institutional transformation, funding criteria, funding decisions, risk assessments, project evaluations, and the establishment of networks. The framework should define in more detail exemplary situations for each of the target groups. The final framework should provide reflective guidance which can support decision making procedures in the identified situations.

### 3. Specifications for the framework architecture

The framework should not just be an academic text. It should be useful to non-academics and flexible to user needs. A webpage, an online presentation, or a document, with inter-linked modules, could give the users a way to consult the parts of the framework addressing the RRI challenges they face.

Users should be able to access the framework from different starting points and detract the most relevant information easily. One way to make this possible is by having the framework consisting of a number of modules, which can be understood independently, but which also points to other relevant modules. The document should have specific entry points for each of the target groups identified in Section 2. Target groups could possibly be grouped in the following way in order to minimize the number of entry points:

- Policy makers
- Research funding organisations
- Universities
- Companies
- European Commission

The language of the framework must be accessible to the different target groups it is intended to support. Much of the debate on responsible research and innovation takes place in an academic language and on an abstract level. There is therefore a need for the final framework to address target groups in a more accessible language. An appendix which explains the conceptual background of the different elements should be available for actors who want to delve into the academic work of Res-AGorA.

#### **Framework building blocks**

The main product of the Res-AGorA project will be a report presenting the framework. The following list suggests content for the presentation of the final framework. Short sections give specific entry points for each target groups, while the final longer sections give access to the more elaborate empirical and theoretical material.

#### **1. Guidance for target groups**

This will be the largest building block of the framework, providing tailored guidance for the identified target groups, enabling them to analyse situations, develop strategic responses, and consider procedural challenges. Although different entry points for different target groups will be needed, it is unclear at this stage exactly how many different types of guidance will be offered in order to address the different needs of the target groups.

## **2. Short presentation of the governance framework for RRI**

Who is the framework intended for?

What kind of guidance does it offer?

Why is there a need for such guidance?

What does the framework consist of (the building blocks)?

## **3. Repository of empirical lessons (MoRRI)**

The MoRRI website will function as a repository for the empirical work, which can be linked from the main report. Both monitoring results, and results from the case studies will be presented here. The website also includes the report from MASIS project, thereby given the possibility to connect our results with earlier data on responsible research and innovation.

“Ideal type” cases exemplifying different RRI governance situations may be developed in order to provide guidance to the target groups

## **4. Explanation of the conceptual background for the framework**

This could be done in two complementary ways:

A non-academic presentation

An academic presentation

## 4. How to support governance of RRI?

The final product of the Res-AGorA project can be envisioned as the development of strategic guidance for actors involved in the governance of responsible research and innovation. This guidance will be structured through the idea of Strategic intelligence (ASTPP: Kuhlmann et al., 1999) while being shaped through the 5 stakeholder workshops of the Res-AGorA project. It will not give definitive answers to how to do responsible research and innovation, but instead provide critical questions, strategic considerations, actions, and measures, which should be included when wanting to facilitate governance of responsible research and innovation.

The envisioned framework creates a structure that is to be filled with the lessons from the empirical work of the Res-AGorA project, which includes both case studies and country monitoring. The eventual guidance of actors is therefore based on our empirical learning. It should be underlined that it will not be a simple prescription of the best procedures nor is it a recipe for how to act in specific situations. The starting point of Res-AGorA is that such guidance would not be appreciative of the complexity of the specific situation. The framework will therefore give advice for the different steps that should be taken in governance of responsible research and innovation. The framework could provide guidance at three interrelated levels:

- **Analytical level**

The first level gives you the ability to analyse your governance situation from a range of different parameters, to make sure you have a clear understanding of the context you work within and the desired impacts you wish to achieve. Especially important here is the different conditions which frame the context. This level can be used both for evaluating former governance arrangements and prepare new ones, and relates very closely to the research model of the Res-AGorA project.

- **Strategic level**

The next level offers key lessons of research on the governance of responsible research and innovation. This is done through lists of questions that need to be considered if you want to have a certain impact in a specific context. As engagement of multiple actors is a central aspect of the framework the questions could be considered in collaboration with relevant stakeholders. The questions are supplemented with related short empirical examples of lessons learnt, that can give inspiration to how to do, and not to do, governance of RRI. These examples are structured by lessons and strategy, but also link to more general information of procedures and how they are used.

- **Procedural level**

This level gives an overview of situations for intervention, actors, and procedures. This overview has the purpose of broadening the considerations of actors when engaging in RRI governance by showing the variety of possibilities. While the surface gives general examples, these examples are related to generic empirical examples and the strategic challenges you meet

when carrying out RRI governance. The Res-AGorA project has examined a number of different methods, which aim to facilitate responsible research and innovation in different fields. Examples include codes of conduct, technology assessment and foresight. It will not be part of the final framework to give a complete overview of such methods nor to give an in depth understanding of each method . The framework should provide strategic considerations, which make a critical evaluation of such methods possible, as well as a number of examples which can help illuminate the variety of methods existing for the facilitation of responsible research and innovation. The governance framework should relate general principles to concrete example or plausible scenarios.

## 5. How could actors use the framework?

To further elaborate on the idea of having a guidance of actors with different entry points the following examples can highlight different uses:

One example could be the evaluation of a new project beginning with few conditions attached. By first looking at the analytical level, actors can learn from our research model how to analyse the situation. That will lead on to some strategic questions that need to be considered. Here actors will be introduced to learning from former experiences with different procedures, thereby increasing knowledge and reflection.

Another entry point could be that actors are in a situation, where certain procedures are already prescribed or where they want quick solutions. This could be a specific political decision that has to be implemented. In this case the procedures are already settled, but there is a need to critically reflect the procedures to fit the context you are working within figure out what considerations are important to make before beginning the project. Entering from a different point the actor will again be led through the different aspects of the framework making sure that important elements of governance of responsible research and innovation will be considered.

## 6. Summing up

This paper has identified the overall guidelines for the creation of a governance framework, which is to be developed in work package 4. The envisioned framework will form a reflexive guidance of actors with the purpose to improve the foundation for making decisions connected to RRI. The dynamic nature of the framework is essential for it to have a continuing relevance, and it should therefore not be seen as a finished product, but first step in a continuous dialogue on how to make research and innovation more responsible.

## 7. references

Fisher, E., & Rip, A. (2013). Responsible Innovation: Multi-Level Dynamics and Soft Intervention Practices. In R. Owen, J. Bessant, & M. Heintz (Eds.), *Responsible Innovation* (pp. 165–183). John Wiley & Sons, Ltd. Retrieved from <http://onlinelibrary.wiley.com.molly.ruc.dk/doi/10.1002/9781118551424.ch9/summary>

Kuhlmann, S., Boekholt, P., Georghiou, L., Guy, K., Heraud, J.-A., Laredo, P., ... Smits, R. (1999). *Improving Distributed Intelligence in Complex Innovation Systems* (MPRA Paper). Final report of the Advanced Science & Technology Policy Planning Network (ASTPP). Retrieved from <http://mpa.ub.uni-muenchen.de/6426/>

Lee, R. G. (2012). Look at Mother Nature on the Run in the 21st Century: Responsibility, Research and Innovation. *Transnational Environmental Law*, 1(01), 105–117. doi:10.1017/S2047102511000136

Owen, R., & Goldberg, N. (2010). Responsible Innovation: A Pilot Study with the U.K. Engineering and Physical Sciences Research Council. *Risk Analysis*, 30(11), 1699–1707.