

PARTICIPATORY KNOWLEDGE FOR SUPPORTING DECISION MAKING (2016.04) – FUNDING CONCLUDED

IDENTIFICATION OF THE ACTION

Type of Activity	Reusable generic tools
Service in charge	DG DIGIT B4
Associated Services	DG CNECT.R3, H3, DIGIT.01, SG.C4, Latvian Ministry of Environmental Protection and Regional Development, Parliament, Council, Publications Office

EXECUTIVE SUMMARY

Despite the large amount of opinions, needs and preferences expressed by citizens, governments' decision making processes are so far still not able to consume this unstructured and dispersed knowledge in order to extract meaningful knowledge and use it as input to decision making. Within this context, this action, titled 'Participatory Knowledge for supporting Decision Making Processes', aims at consolidating and integrating existing reusable tools that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge. This knowledge will in turn be used to provide insights on existing decision making, making them data-driven processes.

In phase 1 of this action, executed in 2015, activities were focused on the identification of the requirements stemming from the public administrations in the different Member States in order to provide a panoramic view of the needs within the Member States and Commission Services. With a better visibility of these needs this action started exploring and assessing existing assets, reusable software solutions, standards and vocabularies that can address the identified needs. This action intends to consolidate and generalise the identified solutions in order to allow them to be used in different areas that aim to address a common challenge. The development effort shall focus on the generalisation of components or integration of components as well as the assessment of modular generic components and the subsequent consolidation into a framework of software solutions. Such modular generic components shall include, as an example, components for sentiment analysis techniques, data analytics, data mining techniques, opinion modelling, text mining techniques and components for visual analytics techniques and reporting (dashboards).

Within phase 1 of this action the above technologies shall be applied in three specific business contexts whereby for each business context a proof of concept will be executed and subsequently further elaborations shall be performed in phase 2 of this action. The three business contexts are (i) the improvement of services through the consumption of citizens' feedback in collaboration with the State Chancellery of Latvia who has developed a leading mobile application called 'Football' (ii) the open participation through perception and opinion elicitation in collaboration with DIGIT IT Governance and Communications Unit and (iii) the execution of policy making through participatory knowledge through the reuse and further extension of the Futurium platform in collaboration with DG CONNECT Support Systems and Tools Unit.

A continuation of such exploratory activities, which were kicked off in phase 1 of this action, shall be continued throughout phase 2, to be executed in 2016. Phase 2 shall be composed of 3 tracks as follows: (i) continue with the further identification of the requirements stemming from the public administrations in the different

Member States as well as Commission services (ii) continue the implementation of already identified pilots, details in the 3 business contexts of phase 1, through the development of further functionality as well as the generalisation of the developed functionalities, and (iii) launch a new wave of pilots in specific domains which hold a potential of later being generalised and scaled-up to be made available to different services agnostic of their specific policy area.

Through these efforts this action shall aim at contributing to making governments throughout Europe open and participatory through the implementation of a number of practical activities. These activities shall strive to make better use of data which is already being collected either internally or externally, thus making it the basis for generating knowledge that brings value to business contexts and contribute towards data-driven decision making processes.

OBJECTIVES

Citizens' participation in governments' decision making processes, through the ability to express their opinions, needs and preferences, is a valuable asset since it brings **insights** and additional **knowledge** to public administrations. Using this knowledge, public administrations can become **more efficient and effective**, offer **user-friendly services**, whilst **reducing costs and administrative burden**; resulting in a **positive impact** on individuals, society, economy, environment etc.

Within this context, the **main objective** of this action is **to consolidate and integrate existing reusable tools that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge. This knowledge will in turn be used to provide insights on existing decision making, making them data-driven processes. It is not the objective of this action to replace existing stakeholder consultation tools, but to give additional value to them by providing further capabilities for gathering, integrating and analysing big quantities of semi-structured or unstructured information.** The proposed capabilities will in particular cross-fertilise with other existing tools such as EU Survey, Your Voice in Europe or the similar tools in the Member States.

To realise the proposed action the following specific objectives are set out:

- To **cooperate with Member States and related networks**, for instance EUPANⁱ, in order to better **identify the technology needs of public administrations** when acquiring stakeholders' opinions as a driving force for open governments. Similarly, this action shall also **cooperate with Policy DGs in defining their needs** in shifting towards data-driven decision making processes;
- To **assess different assets that are currently available** for making them accessible, thus allowing for collaboration, transparency and participation;
- To **consolidate and integrate open and reusable software solutions** that will support the interactive knowledge sharing and will allow the elicitation of citizens' opinions and perceptions which is hidden in tacit knowledge. By leveraging on participation and motivation of citizens, such tools can contribute to better informed decisions and improved legitimacy of the policy making.

SCOPE

By enhancing the participation of stakeholders in decision making we enable governments to make more informed policies, legislative acts and internal decisions. This leads to a participatory type of government that relies strongly on the evidence and the collective knowledge that the various stakeholders bring in. This shall also contribute to inter-administration cooperation and better decision making processes taking into consideration different perspectives coming from different domains and Member States.

The proposed action has a clear focus on using, further extending and mainstreaming **reusable software solutions** to facilitate the capturing of elicited knowledge from unstructured content.

PROBLEM STATEMENT

Society is demanding public administrations in Europe to become more open, transparent, collaborative and participatory in their **pre-legislative consultations, internal decisions and policy-making processes**. Citizens, businesses and other key stakeholders expect their voice to be heard and taken into account. Decision makers on the other hand do not always have the means to reach out and listen to the opinions and perceptions of people. More specifically, acquiring the plethora of citizens’ opinions is a challenging task since they are often expressed in an unstructured way on different platforms. It is even more difficult and expensive to **extract meaningful knowledge** that can be used as input to decision making. Data must be gathered, measured and analysed through discovery and analytics tools, which makes it possible to **identify trends, issues and challenges**. For instance, data coming from interactions on social media contribute towards factors other than evidence. Information that may be captured include personal opinions, corporate interests, lobbying, ideological values and other **‘non-measurable’ factors** that cannot be easily sensed and automatically captured¹. The collected information provides information that stakeholders and policymakers can use to reshape decisions. Decisions may also be inspired by desirable visions and aspirations that are not necessarily in line with current, short-term trends.

Although European institutions and Member States' public administrations have launched several initiatives to collect citizens' opinions when consulting stakeholders, these activities are often fragmented and developed in “isolation” with limited cross-organisational or cross-border cooperation.

There is a strong link between open government and knowledge - open knowledge that can be shared and reused in different context by different stakeholders and across public administrations. However, a number of roadblocks are currently preventing the opening up of knowledge namely at organisational, semantic, technical and legal level. This action aims to address the challenges around opinion elicitation in particular at the **semantic and technical implementation levels** with a main focus on **reuse of existing assets**.

EXPECTED BENEFICIARIES AND ANTICIPATED BENEFITS

Beneficiaries	Anticipated benefits
- EU institutions - Member States public administrations (national, regional, local levels)	The development of a toolbox will allow the collection of opinions from various digital sources in a standardised manner and support informed decision making. This will provide DGs at the European Commission, EU institutions, European agencies and Member States public administrations at all levels with the following benefits: <ul style="list-style-type: none"> • A coherent way to manage open knowledge. • Support public administrations to become more modern, adaptive, responsive, dynamic, flexible organisations to better address the expectations of their stakeholders, • Reach out to citizens through e-participation and open knowledge sharing. This will ensure higher rates of collaboration as compared, for instance, to traditional expert consultations, thus resulting in more effective processes

¹ See: [The Futurium—a Foresight Platform for Evidence-Based and Participatory Policymaking](#), Springer, 2013

	<ul style="list-style-type: none"> • An increase of the efficiency, e.g. by: <ul style="list-style-type: none"> ○ Reducing time to make the right decisions; ○ Getting the right knowledge/people as needed ○ Harnessing tacit knowledge to support policy making. • A major involvement of the users resulting in: <ul style="list-style-type: none"> ○ An increased generation of knowledge. ○ Maximum re-use of the knowledge. ○ Higher quality of the activities carried out through the sharing of the knowledge. ○ An easy clustering of the expertise of the users.
- Citizens, organisations and business in Europe	<ul style="list-style-type: none"> • Voice their opinion and influence the decisions of governments (supporting e-participation). • Innovate through the reuse of open knowledge and reusable open source software for knowledge discovery. • Empowerment of individuals who have the possibility to build consensus around their own ideas and influence decision makers through a transparent process. • Support to civil organisations, including associations of citizens, youth, unions, and non-governmental organisations, etc. facilitating their open, transparent and efficient collaboration with governments in policy making matters.

RELATED EU ACTIONS / POLICIES

Action / Policy	Description of relation, inputs / outputs
Digital Agenda	Action 3: Open data and re-use of public sector information This action promotes government bodies at all levels: local, regional, national, European and international, to disseminate and reuse the vast amounts of information that is collected as part of their tasks. Activity 5 of this action promotes the dissemination and reuse of information as a means for improving transparency of organisations.
Better regulation policy	One of the Smart Regulation's policy goals is to remove bottlenecks and streamline the Commission's policy making processes as well as to promote open participation through public consultations.
ISA Action 4.2.5.- Sharing and reuse strategy	The reusable practices and guidelines as well as the reusable software solutions delivered through this proposed action can adopt the strategy defined in Action4.2.5 in order to ensure that the outputs are shared and re-used with public administrations in Europe.
ISA Action 4.2.1.- Bringing together the eGovernment platforms (Integrated collaborative platform – Joinup)	The Joinup collaborative platform shall be used as a means for sharing the experiences as well as the deliverables of this action with the Member States' public administrations.

EuroVoc	EuroVoc can be assessed as a potential multilingual, multidisciplinary thesaurus covering the activities of the EU to be used as a basis for the vocabulary used in “Futurium” model (see below).
ISA Action 1.1.- Improving semantic interoperability in European eGovernment systems (SEMIC)	Reusable interoperability solutions, core vocabularies, studies and other resources made available through SEMIC and which might be relevant to this action shall be explored and reused as much as possible in order to ensure interoperability as well as continuation of existing efforts.
Your Voice in Europeⁱⁱ	'Your Voice in Europe' is an existing platform that allows for public consultations to be carried out in order to collect structured data in the form of questionnaires. This platform will be explored as a data source of stakeholders' opinions.
EU Surveyⁱⁱⁱ	EU Survey is a platform provided by the European Commission under the ISA Funding programme with the intention of allowing Commission Services to easily create online surveys as a means of stakeholder opinion or other data collection for potentially any domain. This is also considered to be of potential interest to this action as an existing and complimentary source of data that could be consumed by certain business contexts.
'ISA ² Action ICT implications of EU legislation'	Results and conclusions related with the properly preparation and evaluation regarding the ICT implications will be taken into account for developing reusable solutions that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge.
ISA ² Action 'Interinstitutional framework for digital OLP management'	The proposed interoperable ways of structuring the content of the documents that need to be exchanged between the institutions for the purposes of the ordinary legislative procedure will be taken into account for developing reusable solutions that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge.
ISA ² Action 'Legislation interoperability tools (LEGIT)'	Existing or under development building blocks (i.e. software, tools etc.) that support and improve the electronic exchange of documents and metadata in the context of the legislative process and the transformation between different formats will be taken into account for developing reusable solutions that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge.
ISA ² Action 'European Legislation Identifier (ELI)'	The proposed approach for identifying legislation documents and the supporting assets and solutions will provide input for developing reusable solutions that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge.
ISA ² Action 'Application of EU law: provision of cross-sector communication and problem solving tools (THEMIS)'	Reusable tools and the underlying semantic structures and data standards for monitoring the application of EU law will be taken into account for developing reusable solutions that allow the electronic participation of stakeholders, the analysis of the captured opinions and the discovery and generation of knowledge.

REUSE OF SOLUTIONS DEVELOPED BY ISA, ISA² OR OTHER EU / NATIONAL INITIATIVES

The final output of phase 1, which shall amongst other things explore what tools are available for reuse by public administrations, will greatly impact the choice of solutions that might be reused by this action. Currently, the reuse of the following initiatives can be identified:

- The Football mobile application developed by the Latvian government shall be generalised in order to be made available for re-use by other Member States as well as extended with additional components to provide additional functionality.
- The Futurium platform, developed by DG CNECT.R3 and currently used by Commission's services, shall be further extended and generalised within the scope of this action in order to embed further data analytics as well as user interface and gamification capabilities and make them customisable for the governments.

EXPECTED RE-USABLE OUTPUTS (solutions and instruments)

All outputs generated by each of the pilots shall be provided in a re-usable format. The following are concrete re-usable outputs that can be identified at this stage:

Output name	Football Application and complimentary components
Description	The Football Application together with a set of optional and complimentary components that enhance the functionality of the software package shall be made available for reuse to other Member States' public administrations as well as Commission services.
Reference	
Target release date / Status	Q2 2016 / project currently being kicked-off

Output name	Futurium
Description	The Futurium Application shall be generalised and extended further with additional functionality and subsequently made available for re-use by other public administrations and Commission services.
Reference	
Target release date / Status	Q2 2016 / project currently being kicked-off

ORGANISATIONAL APPROACH

Expected stakeholders and their representatives

Stakeholders	Representatives
ISA ²	The ISA ² Committee will oversee the project, with the assistance of the ISA ² Coordination Group.
DIGIT.B4	This unit is the service in charge of this action. It will coordinate the interaction between the different stakeholders within the European

Digital Business Solutions – Corporate Financial Procurement & Policy Solutions Unit	Commission.
DG CNECT.R3 Support Systems and Tools Unit	This unit is an associated service of this project and will take part in the definition of the requirements, the performance and the guidance of this proposal and will ensure collaboration with other units, such as F4, O2, H3, G3, D3, D4, etc. that have developed important policies or R&I related to this proposal.
DIGIT.01 Governance and Communication Unit	This unit is an associated service of this project and will take part in the definition of the requirements, the guidance and providing lessons learnt of this proposal.
Latvian Ministry of Environmental Protection and Regional Development	Latvia has developed the application "Football", whose aim is to collect citizen's feedback on the quality of the services provided by Latvian public institutions. The application allows citizens to locate the closest public institution, to find the related contact information and to provide comments about the quality of the service they received. Latvia is an associated Member State of this action.
SG.C4	This unit is an associated service of this project and will take part in the definition of the requirements, the guidance and providing lessons learnt of this proposal.

Communication plan

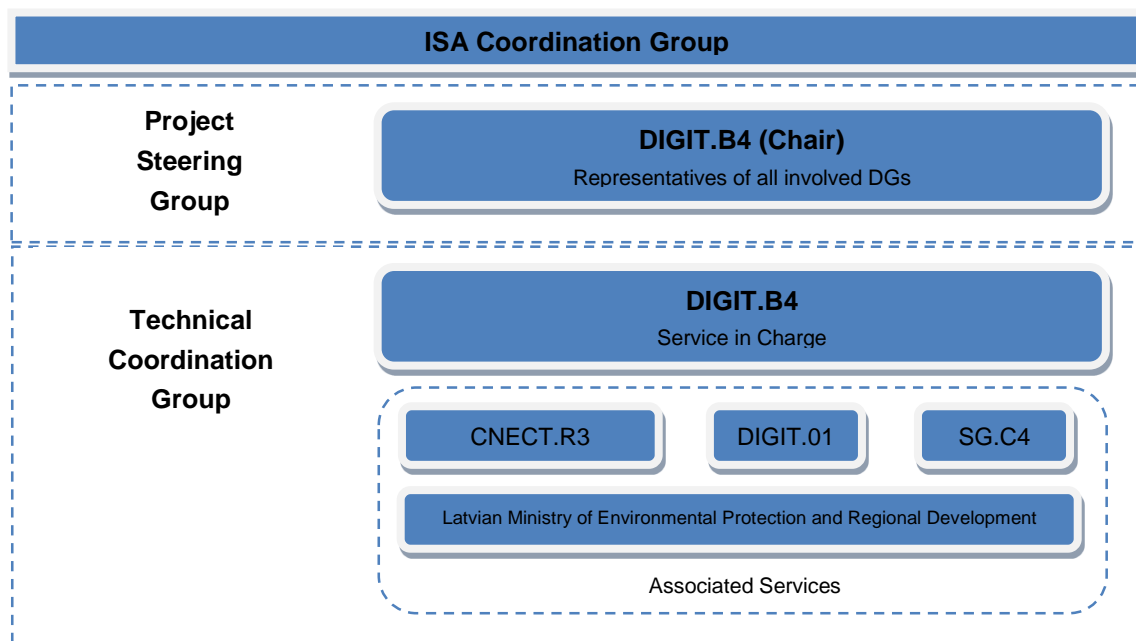
Event	Representatives	Frequency of meetings / absolute dates of meetings?
Project kick-off meeting	DIGIT.B4, CNECT, DIGIT.01	Once at the beginning of the project
Technical Coordination Group	Team leader and team members of DIGIT.B4 and CNECT.R3 technical teams	Bi-weekly
Project Steering Group	Team leader and HoU of DIGIT.B4 and team leaders and HoUs of associated services of each of the activities	Bi-monthly
Bilateral meeting with Member States	DIGIT.B4 representatives, Member States representatives	These are arranged by DIGIT B4 on ad hoc basis.
Bilateral	DIGIT.B4 representatives, Policy	These are arranged by DIGIT B4 on ad hoc

meetings with Policy DGs	DGs representatives	basis.
Relevant conferences and events	DIGIT.B4 representatives with any other project stakeholder	On occasions whereby DIGIT is invited to participate in meetings organised by Member States, policy DGs etc.
Dedicated group	ISA ² DIGIT.B4 team members, Stakeholder's representatives, ISA unit	These meetings are arranged by the ISA unit.
Joinup	(online)	

Governance approach

This action is part of the ISA programme and therefore it follows the ISA governance structure with the action reporting back to the Member States' representatives pertaining to the ISA working groups.

This action will actively involve all associated services at each of the different stages. The governance structure for this action is depicted in the following diagram.



In order to achieve its objectives this project will work closely together with primarily identified associated DGs to better define the business needs and challenges, bearing in mind the need of potentially other services in order to come up with generic and extendable software solutions. Particular attention will be given to the coordination activities in order to ensure a successful undertaking of the different activities.

TECHNICAL APPROACH

This action shall aim at contributing to making governments throughout Europe open and participatory through the implementation of a number of practical activities. These activities shall strive to make better use of data which is already being collected either through existing internally provided platforms or else through external data collection sources. This data shall be the basis for generating knowledge that brings value to business contexts and contribute towards decision making processes which are more strongly data-driven.

In **phase 1** of this action, executed in 2015, activities were focused on the **identification of the requirements stemming from the public administrations in the different Member States**. The requirements were captured through a field exercise, primarily in cooperation with relevant networks such as the European Network of Public Administrations (EUPAN) and the results of which have provided a panoramic view of the needs within the Member States. In addition, this action also cooperates with a number of Commission Services in order to identify the concrete needs and value added that the open and participatory government practices would bring to decision making processes.

With a better visibility of the needs of the Member States and the Commission Services this action started exploring and assessing **existing assets, reusable software solutions, standards and vocabularies** that can address the identified needs. The identified reusable software solutions shall be classified according to the type of participation platform that it belongs to in order to make it easier for public administrations and Commission services to identify which reusable software might be relevant for them to consider according to the type of challenge they wish to address.

The above mentioned activities are complemented by further activities within this action with the intention of consolidating and generalising the identified solutions in order to allow them to be used in different areas that aim to address a common challenge. These are subsequently integrated in a way that they can consume existing data sources, generate knowledge and present outputs. The **provision of a number of generic and customisable reusable software solutions** shall drive forward stakeholder engagement, enable perception and opinion elicitation and facilitate the generation of participatory knowledge in decision making processes.

The development effort for delivering a number of **software solutions** is foreseen to produce two main streams:

Generalisation of components or integration of components:

- In the context of policy making the existing **participatory platform Futurium** (developed by CNECT) will be further generalised and extended with functionalities such as more customisable **workflows, group/community management, access rights as well as user experiences**. The platform is currently used by DG CNECT and other DGs to support stakeholder engagement and evidence based policy for the Digital Single Market. Furthermore, several local governments and non-governmental organisations have shown interest or are willing to adopt the Futurium model to support their policy making processes². The extended platform should build on and extend the generalisation of the existing open source assets which needs to be consolidated to allow customisability as well as extensibility through the plug in of modular generic components, e.g. by adding graphical, ease-to-use configuration editors.
- **Link to social media and other collaborative work environments** in order to be able to explore different sources of information containing scientific evidence, users' perceptions, expectations and opinions.

Modular generic components to be assessed and consolidated into a framework of software solutions, in accordance with the requirements identified during phase 1 and phase 2 – track 1 (see below) of the action. Potential software components include:

² The Futurium will be discussed in several events where current and perspective users will be invited. This includes a networking session in the context of the annual [ICT2015 events in Lisbon](#).

- Components for **sentiment analysis techniques** in order to analyse the comments and co-created content posted by users on the platform and decide whether an input is pro or contra the topic/vision/idea discussed. Such techniques will also provide a means to calculate the overall sentiment of participants with regards to a topic debated on the core platform or other social media, thus building further upon the "likelihood", "feasibility" and "desirability" features that already exist in Futurium. Components to debate and analyse likely impacts of the proposed topics/visions/ideas will be added.
- Components for **data analytics**, in order to be able to classify the different topics discussed and establish some figures about them such as: relevance, periodicity, degree of participation, activity etc.
- Components for **data mining techniques** - in collaboration with action nr. 1.22 Big Data and Open Knowledge - to understand the correlations between variables, cluster data, detect hidden patterns in data, perform trend analysis (including time series), extract facts from evidence, link evidence to the other content types according to relevance, etc. This part of the work should re-use as much as possible existing components and data mining tools, possibly available as open source.
- Components for **opinion modelling and text mining techniques** in order to extract from the posts of users, on the core platform or other existing collaborative tools and/or social networking tools, the main topics of interest, the key opinions discussed and also the popularity (strength) of each one. Combined with social network analysis (e.g. types and number of connections, number and popularity of posts), this can also help identify the opinion leaders on the platform. Re-use and adaptation of open source Natural Language Processing (NLP) software will be explored, such as GATE^{iv}, Apache OpenNLP^v, Apache Mahout^{vi} or UIMA^{vii}.
- Components for **visual analytics techniques** for presenting opinions, sentiment or any other type of data in formats which can be understood both by participants but also by decision makers, who can then use them as input to legal, organisational or political decision making processes. This will include the graphical representation of various types of user inputs and their inter-relations (e.g. structuring topics/visions/ideas).
- Components for **reporting (dashboards)** will allow to build a more flexible and adaptable solution, since from the reporting area it is possible to focus on the interested domains (or dimensions for analysis) of the organisation. A multi-layer reporting involving different stakeholders will make it easier the decision making resulting in a more efficient organisation.

Within **phase 1** of this action the above technologies shall be applied in **three specific business contexts** whereby for each business context a proof of concept will be executed and subsequently further elaborations shall be performed in phase 2 of this action.

Business context 1: Improving services through the consumption of citizens' feedback

The analysis of citizens' feedback through data mining and visualisation tools allows for public administrations to **capture trends and knowledge that are able to provide insights** that would otherwise be difficult to obtain if analysis is only performed manually by individuals. Such tools allow the generation of knowledge that could provide an edge over manually generated knowledge.

The State Chancellery of Latvia has developed a leading mobile application called 'Football' that not only provides useful information to citizens on the services offered by public administrations but also allows the citizens to in turn provide feedback on the services received. The purpose of this application is to promote 'good football' which in Latvian terms reference to the provision of good and effective public services without bouncing citizens around different public administrations. The feedback captured through this mobile application is currently processed and analysed manually and this action therefore aims at providing data mining and visualisation tools that can digest the free-text form comments provided by citizens in order to complement the existing functionalities of this mobile application.

Business context 2: Open participation through perception and opinion elicitation

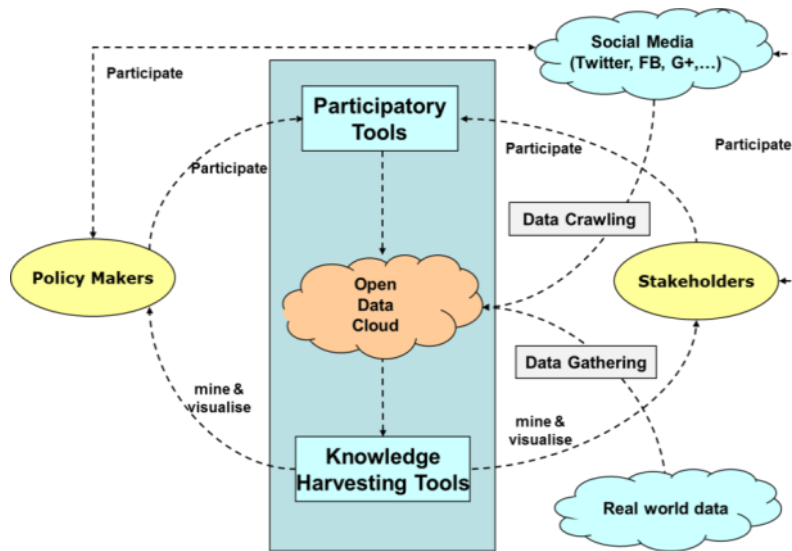
This activity will look into the provision of tools that make use of existing and well established collaborative tools within a public administration in order to **elicit users' and staff members' perceptions, expectations and opinions as a means of influencing internal decision making processes related to different domains such as human resources, service provisions as well as internal procedures.** Through this influencing mechanism the public administration would be allowing open participation for users and staff members without the need to introduce a new platform to which the participants need to be accustomed to or forced to use in order to communicate their opinions.

Business context 3: Policy making through participatory knowledge

This activity will reuse and extend Futurium in order to develop a **platform for open government through participatory knowledge combining people's opinions with scientific evidence.** [Futurium](#) was initially developed with the primary purpose of hosting and curating visions and policy ideas to support a participatory foresight project, Digital Futures. However, it has turned into a general platform on which to experiment with new **policy-making models** based on **foresight methodology, scientific evidence and participation.** Futurium is based on the open source content management system **Drupal**. The platform implements a data model that maps and co-relates typical policy making concepts (e.g. 'vision', 'desirability', 'evidence', 'impact', 'challenge', etc.) into Drupal content types and allows users to co-create visions and policies and their inter-relations as well as to provide scientific evidences and organise participatory events, just like popular social networks. Extending Futurium, as outlined above, will allow platform users (e.g. local governments, NGOs, Unions etc.) to capture explicit knowledge, but also make use of latent knowledge by employing sentiment and text analysis and opinion modelling techniques.

The Futurium is meant to provide a credible response to the need of running structured conversations with stakeholders and making sense of their input. This is currently difficult to achieve in popular social media because of their unstructured and uncontrolled approach vis-à-vis user's inputs. Conversely, traditional stakeholder surveys provide a fully framed approach to gather data but are usually less usable and attractive than social media. Futurium provides an optimal trade-off between the informal, unstructured and uncontrolled social media approach and the formal, structured and more traditional approach of surveys. This allows broadening participation while providing more accurate and cost-effective feedback to policy makers.

By applying the extended Futurium platform to a policy making context, the knowledge generator will result in better decisions leading to improved accuracy and legitimacy of public administration actions particularly for actions involving multiple administrations. The interaction between the different entities in this action is as per the following diagram:



A continuation of such exploratory activities, which were kicked off in phase 1 of this action, shall be continued throughout **phase 2**, to be executed in 2016. Phase 2 shall be composed of **3 tracks** as follows:

- **Track 1:** continue with the further **identification of the requirements** stemming from the public administrations in the different Member States as well as Commission services. In addition this track shall also continue the exploration and assessment of **existing assets, reusable software solutions, standards and vocabularies** that can address the identified needs; inputs from early usages of the Futurium platform will be taken into account (we expect that by the time the new project will be launched we will benefit from the input of at least five Futurium instances).
- **Track 2:** continue the implementation of already identified pilots, details in the 3 business contexts of phase 1, through the **generalisation of the Futurium functionalities** and thus the **extension** of their use to **policy agnostic contexts** in order to maximise the benefit and return on investment of the proposed solution. Furthermore, this track shall also ensure that the software components developed for these pilots are extended further through new functionality, new user experience contexts (e.g. gamification, interactive and mobile use,...) which shall be driven by the needs identified;
- **Track 3:** launch a **new wave of pilots** in specific domains which hold a **potential** of later being **generalised** and **scaled-up** to be made available to different services **agnostic of their specific policy area**. One potential area of interest could be the **pre-legislative consultations through stakeholder engagement**. The consolidation and integration of different software solutions shall enable the generation of participatory knowledge through the digestion of data coming from sources that are both internal and external to the public service/organisation.

Pre-legislative consultations will be more information-led by better exploiting evidence/data and opinions collected through existing platforms in a way that give a more accurate and wider consideration of stakeholder perceptions and opinions as well as to scientific evidence. Better digestion of feedback received through the **Better Regulation** initiative can also be considered as a new source of citizen participation that will require better analysis of the feedback received. The aim of this initiative is to ensure that policy is prepared, implemented and reviewed in an open, transparent manner and to ensure that the full process is fed with the best available evidence and as well as stakeholders' feedback. For this reason, after better analysis of the Member States' and the Commission's common needs through the activities defined in track 1 above, some reuse of existing software components, particularly those provided by the Futurium platform, will be pursued in this context.

The software solutions to be considered in this context would support the analytics and discovery of knowledge through methods such as automatic clustering based on the evaluation of structured or non-structured data sources. This is considered to be particularly key in policy areas where large number of consultation feedbacks are received and are required to be analysed and digested. Techniques to be used could include analytics and discovery as well as reporting and visualisation methods.

NOTE relevant to all activities - Personal Data Privacy

In this process, privacy and data protection rules will be respected and carefully analysed before implementing a solution. Data anonymisation practices, such as data scrambling will be applied if necessary.

COSTS AND MILESTONES

Breakdown of anticipated costs and related milestones

Phase: Inception Execution Operational	Description of milestones reached or to be reached	Anticipated Allocations (KEUR)	Budget line ISA ² / others (specify)	Start date (QX/YYYY)	End date (QX/YYYY)
Execution	<u>Phase 2.1</u> D.1.- MS and EC requirements assessment D.2.- Inventory of reusable software solutions, standards and vocabularies	80	ISA ²	Q2/2016	Q1/2017
	<u>Phase 2.2</u> D.3.- Specification definition D.4.- Generalisation of core platform and modular components D.5.- Extension of core and modular components in the context of the pilots	160	ISA ²	Q2/2016	Q1/2017
	<u>Phase 2.3</u> D.6.- Pilot requirements assessment D.7.- Specification definition D.8.- Implementation of core and modular components in the context of the pilots	200	ISA ²	Q3/2016	Q1/2017

Operational					
	Total		440		

Breakdown of ISA² funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Execution – Phase 2	440	

ANNEX AND REFERENCES

Description	Reference link	Attached document
A vision for Public Services	http://ec.europa.eu/digital-agenda/en/news/vision-public-services	
The Futurium—a Foresight Platform for Evidence-Based and Participatory Policymaking	http://download.springer.com/static/pdf/620/art%253A10.1007%252Fs13347-013-0108-9.pdf?auth66=1410041623_02c8d634d5b06ca384c1cf468537d06d&ext=.pdf	

ⁱ <http://eupan.eu/>

ⁱⁱ http://ec.europa.eu/yourvoice/index_en.htm

ⁱⁱⁱ <http://ec.europa.eu/eusurvey/>

^{iv} <https://gate.ac.uk/>

^v <https://opennlp.apache.org/>

^{vi} <https://mahout.apache.org/>

^{vii} <https://uima.apache.org/>