1.4 IPV6 FRAMEWORK FOR EUROPEAN GOVERNMENTS (2016.09)

1.4.1 IDENTIFICATION OF THE ACTION

Type of Activity	“Common Frameworks “
Service in charge	CONNECT.E4
Associated Services	

1.4.2 EXECUTIVE SUMMARY

Almost all relevant data networks today are operating with the Internet Protocol - IP. Thus, every European digital cross-border communication is based on IP. The Internet Protocol Version 4 has around 4 billion addresses available, which officially run out. The lack of available IPv4 addresses is one of the main reasons why the change from IPv4 to IPv6 (which has a significantly greater address space) is without alternative.
The adoption of IPv6 in Europe, in particular within European public administrations, is still low, but the availability of IPv6 communication is vital for the economic development and the digitisation of European public administrations. The goals of the Digital Agenda for Europe and the Digital Single Market Strategy are based on stable and reliable data networks.
This project will create a common framework for European public administrations on how to procure addresses, organize the address space and adapt IPv6.
The first step to accomplish this is to create a detailed guide to implement a Local Internet Registry (LIR) to act as an address provider on national level within the public administration. Further steps are to create technical IPv6 profiles for the Network equipment and to introduce an IPv6 Transition Guide. Furthermore, this project will create Training Material for IPv6 Workshops that will help to enable the public administration of the EU Member states (MS) to cope with the IPv4 to IPv6 Transition.

1.4.3 OBJECTIVES

To ensure the cross-border interoperability of online services and the digitisation of European public administrations IPv6 is a must-have for the ISA^2 goals. MS as for instance Germany could bring strong support to the deployment of IPv6 within the European public administrations. Experience from certain Member States, e.g. Germany and other GEN6 participants should be reused and be made available and usable for all MS and the EC itself. Existing local IPv6 concepts and guidelines for public administrations shall be merged and adapted for a European-wide usage. These concepts and guidelines consider technical as well as organizational aspects.
This will help to create a common framework to support all EU Member States in managing the transition from IPv4 to IPv6.

1.4.4 SCOPE

The aim is to deliver a clear blueprint for public administrations within Europe on how to procure and organize IPv6 address space and implement it within their organisations. The results will be derived

from research and transition experience from MS that already derived concepts and guidelines like Spain, Slovenia, Switzerland (non-EU) and Germany. For the creation of these blueprints and guidelines, tangible experiences already made by European countries will be used. For example why and how to operate a so-called government LIR for the public administration of a MS. Therefore, the results can be the basis for a standardisation of the IPv6 introduction in the EU.

1.4.5 PROBLEM STATEMENT

In context of the lack of IPv4 addresses, the ability for a successful transition to IPv6 is crucial. The low deployment rate and a lack of experience and proven concepts for public administrations in Europe hinder cooperation within the EU.
Technically IPv6 is the only available solution on the network layer which has the ability to fulfil the requirements resulting from the sum of EU initiatives related to information technology.

1.4.6 EXPECTED BENEFICIARIES AND ANTICIPATED BENEFITS

Beneficiaries	Anticipated benefits
Member states' public administrations	Every Member state faces technical and organizational challenges in the transition to IPv6. A Common IPv6 framework will help to share best practices among the European public administration.
European Commission	A common European IPv6 framework will help the Commission to coordinate the development of next generation networks throughout Europe.
Member states' public administrations, vendors, ISPs, public users, universities	As a buyer and user of network infrastructure and applications, public administrations play an important role in the European market. With the introduction of IPv6, the demand for IPv6-capable products will rise. A support of IPv6 will create greater transparency and make planning for participating interest groups easier. At the same time, the stimulus package will help to motivate the IT sector to adopt IPv6.
governments, vendors, ISPs, public users, universities	IPv6 is a new technology. With professional guidance on how to use it, the security and the reliability of IT infrastructures across Europe will rise.
European citizens / universities	Support within the EU public administration of IPv6 will create greater transparency and make planning for participating interest groups easier.

1.4.7 RELATED EU ACTIONS / POLICIES

Action / Policy	Description of relation, inputs / outputs
GEN6	http://www.gen6-project.eu The project described here is based on the results of the GEN6 project.
Digital Agenda for Europe and Digital Single Market Strategy	http://ec.europa.eu/priorities/digital-single-market/ http://ec.europa.eu/digital-agenda/en/digital-agenda-europe-2020-strategy IPv6 is the essential precondition for a digital Europe. This work will enable the public administrations of the MS to communicate safe, secure and cross-border. The adoption of IPv6 in the public sector will reinforce business in the European ICT market
Digitisation of the EU	http://ec.europa.eu/digital-agenda/en/digitisation-digital-preservation Digitisation of the EU will need more addresses for the additional digitised systems and applications. This is only possible by the usage of IPv6, which needs support to be deployed in the EU public administrations. To push this, the EU administration itself has to be a pioneer.
European eGovernment Action Plan 2011-2015	http://ec.europa.eu/digital-agenda/en/european-egovernment-action-plan-2011-2015 The basis of a successful European e-Government strategy is a European communications network. A “Common IPv6 Framework” will help to achieve this for the near future. This is also valid for the upcoming follow up plan “new EU eGovernment Action Plan 2016-2020” http://ec.europa.eu/digital-agenda/en/news/workshop-new-eu-egovernment-action-plan-2016-2020

1.4.8 REUSE OF SOLUTIONS DEVELOPED BY ISA, ISA^2 OR OTHER EU / NATIONAL INITIATIVES

This project will be based on the results of the GEN6 project (http://www.gen6-project.eu/). The work will also take into account the relevant documents of the RIPE (http://www.ripe.net). In addition, the extensive results of the local German governmental IPv6 research and development project (http://www.bva.bund.de/DE/Organisation/Abteilungen/Abteilung_BIT/Leistungen/IT_Beratungsleistungen/IPv6/best_practice/bestpractice_node.html) will be extended and adapted for an EU level usage. The content is already partly translated to English and available free under a creative commons licence for everyone over the Internet.

1.4.9 EXPECTED RE-USABLE OUTPUTS (solutions and instruments)

Output name	**1.** Guide to setup IPv6 in the public administration - LIR setup and processes
Description	A detailed guide on how to order address space, to set up and implement a Local internet Registry
Reference	
Target release date / Status	4 / 2016

Output name	**2.** IPv6 Profile for public administrations of the EU
Description	A detailed technical profile with recommendations, to implement IPv6 options within IPv6 components for public administrations.
Reference	
Target release date / Status	6/ 2016

Output name	**3.** IPv6 Transition Guide for public administrations of the EU
Description	A guideline on how to migrate a public authority of a MS to IPv6/IPv4 dual-stack. It includes step-by-step instructions, security recommendations and project organisation guidelines.
Reference	
Target release date / Status	12/ 2016

Output name	**4.** IPv6 Workshop material for public administrations of the EU
Description	Slide sets and usage instructions to enable public administrations of the EU to start with a cost efficient IPv6 planning phase.
Reference	
Target release date / Status	12 / 2016

Output name	**5.** Description and discussing document of IPv6 related EU infrastructures, especially TESTA-NG for public administrations of the EU

Description	This document creates the link between the guidelines and the technical profile to the actual network-infrastructure.
Reference	
Target release date / Status	09 / 2016

1.4.10 ORGANISATIONAL APPROACH

1.4.10.1 Expected stakeholders and their representatives

Stakeholders	Representatives
ISA^2 coordination group	The ISA^2 coordination group is expected to be one of the first and most important stakeholders
EU Member states' national authorities	CIO's, decision makers of national authorities
Some former GEN6 members	Former GEN6 representatives of the MS
RIPE NCC (in cooperation with)	Representatives of RIPE who developed the IPv6 RIPE profile document

1.4.10.2 Communication plan

The scope and the current project status will be published on a dedicated project homepage. In addition, all partners are encouraged to place articles in the media. Presentations on conferences including RIPE meetings or related events (Mobile World Congress Barcelona, CeBIT Hannover) will produce project attention.

1.4.10.3 Governance approach

The action will be carried out by CONNECT.E4 and supervised by the ISA^2 Coordination Group.

Cross Relations:
Cooperation with RIPE NCC, Member states, GEN6 Participants
Regular meetings and written correspondence

1.4.11 TECHNICAL APPROACH

All documents described above will be proven by results from a lab environment, so all statements are accompanied by relevant evidence.

Technical Approach:
- Organizational and Process LIR Definition
- Assessment of relevant IT devices
- Identification of relevant IPv6 standards
- Definition of requirements to IPv6 enabled devices within European public administrations
- Definition of minimal mandatory IPv6 capabilities

1.4.12 COSTS AND MILESTONES

1.4.12.1 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)
Inception	Project Charter	30	ISA^2	Q1/2016	Q1/2016
Execution	output 1	80	ISA^2	Q1/2016	Q1/2016
	output 2	120	ISA^2	Q1/2016	Q2/2016
	output 3	80	ISA^2	Q1/2016	Q4/2016
	output 4	40	ISA^2	Q1/2016	Q4/2016
	output 5	80	ISA^2	Q2/2016	Q4/2016
operational	pilot -output 3	35	ISA^2		
	pilot -output 5	35	ISA^2		
	Total	500			

1.4.12.2 Breakdown of ISA^2 funding per budget year

Budget Year	Phase	Anticipated allocations (in KEUR)	Executed budget (in KEUR)
2016	Inception	30	
2016	execution, operational	470	
2017			
2018			
2019			
2020			

1.4.13 ANNEX AND REFERENCES

Description	Reference link	Attached

		docu ment
GEN6	http://www.gen6-project.eu/	
Spain's' transition to IPv6 strategy	http://administracionelectronica.gob.es/pae_Home/pae_Estrategias/pae_Interoperabilidad_Inicio/pae_Transicion_a_IPv6.html?idioma=en	
The Government of the Republic of Slovenia, Ministry of Higher Education, Science and Technology Study: Transition to IPv6 (Guideline for Deliberation on the National IPv6 Strategy)	http://go6.si/docs/Study_MVZT_IPv6_en.pdf	
Federal Ministry of the Interior and "Deutschland Online Infrastruktur", presentation IPv6 Workshop - creating a constructive Dialogue, European Commission, April 2010. Presentation in the NL	https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/20114.pdf https://www.forumstandaardisatie.nl/fileadmin/os/presentaties/10mei12_constanze-buerger.pdf	
All Documents from Germany	http://www.bva.bund.de/DE/Organisation/Abteilungen/Abteilung_BIT/Leistungen/IT_Beratungsleistungen/IPv6/best_practice/bestpractice_node.html	