

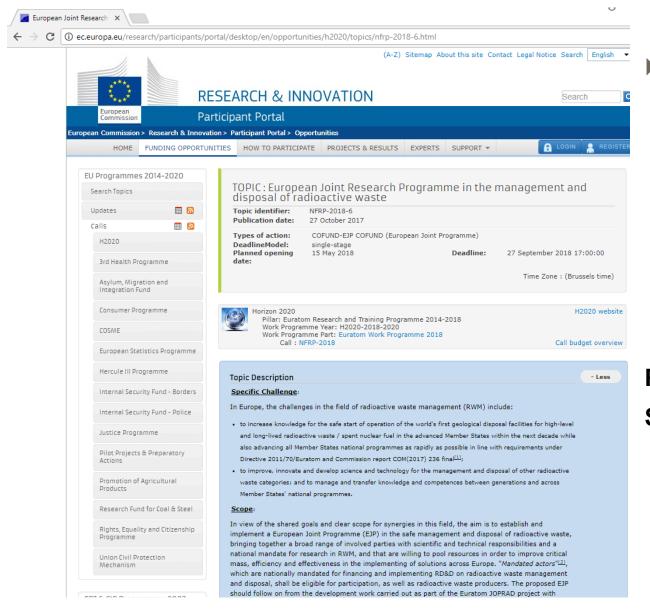
Preparation of activities to be included in EJP1

M. Garcia and S. Schumacher (Core Group)

EURATOM Call WP2018 - published

27/10/2017 Official publication of EURATOM WP2018 Call on the EC portal

http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/nfrp-2018-6.html

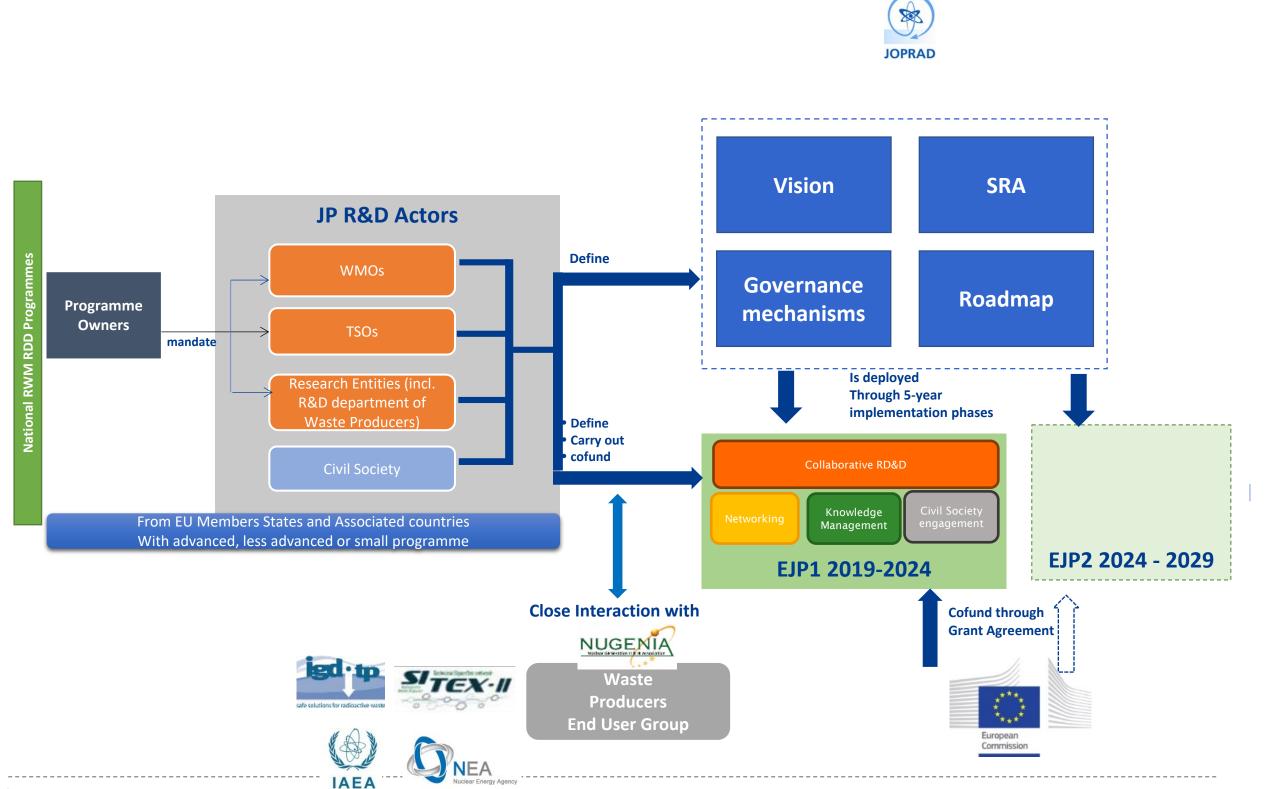


- NFRP-2018-6: European Joint Research Programme in the management and disposal of radioactive waste
 - Type of action: EJP COFUND (60 months)
 - ► Available EC budget: 26-32,5M€
 - **EC funding rate:** 55% of total eligible costs

Published : 27/10/2017 Submission deadline: 27 September 2018

Link

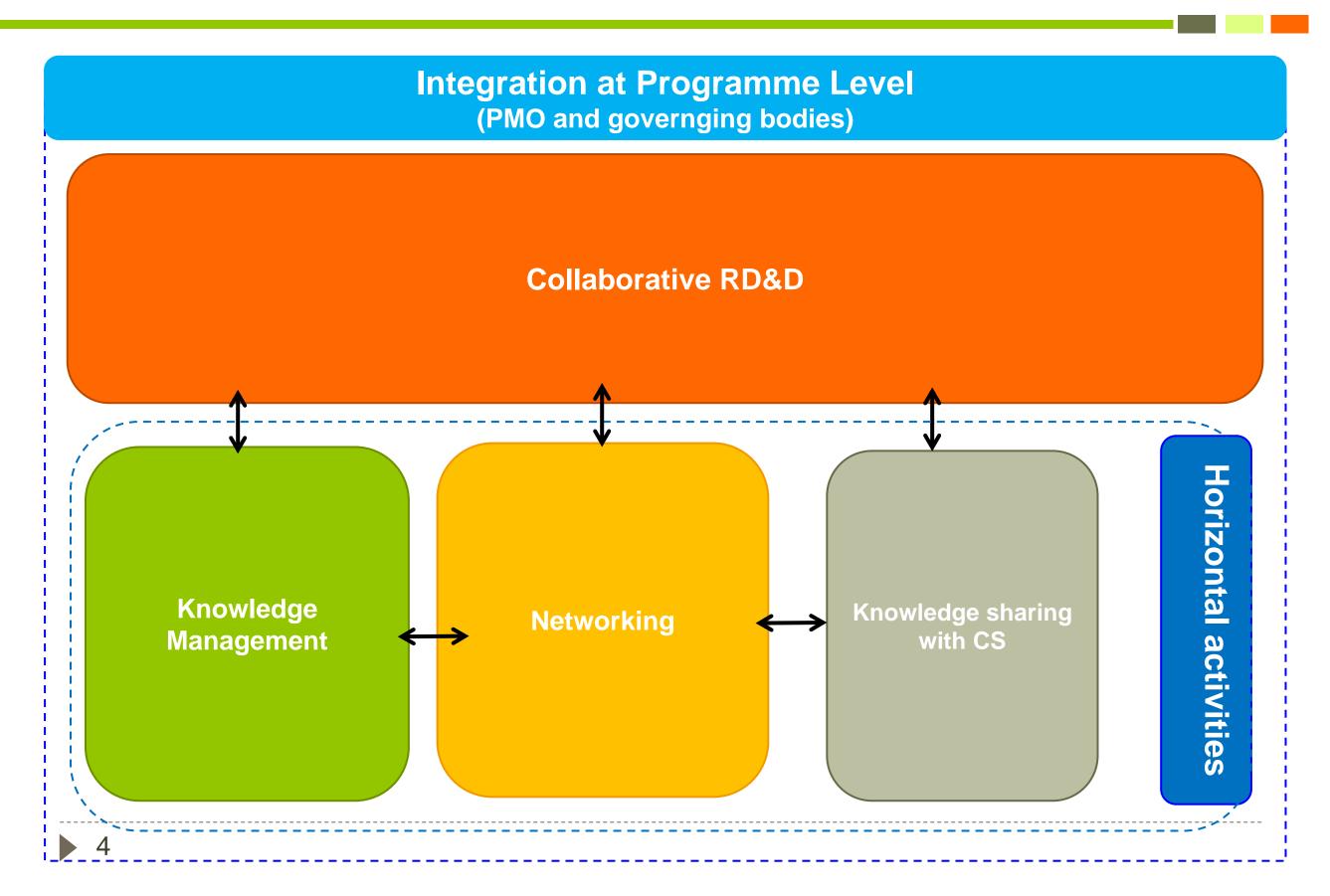
Joint research Programme in RWMD



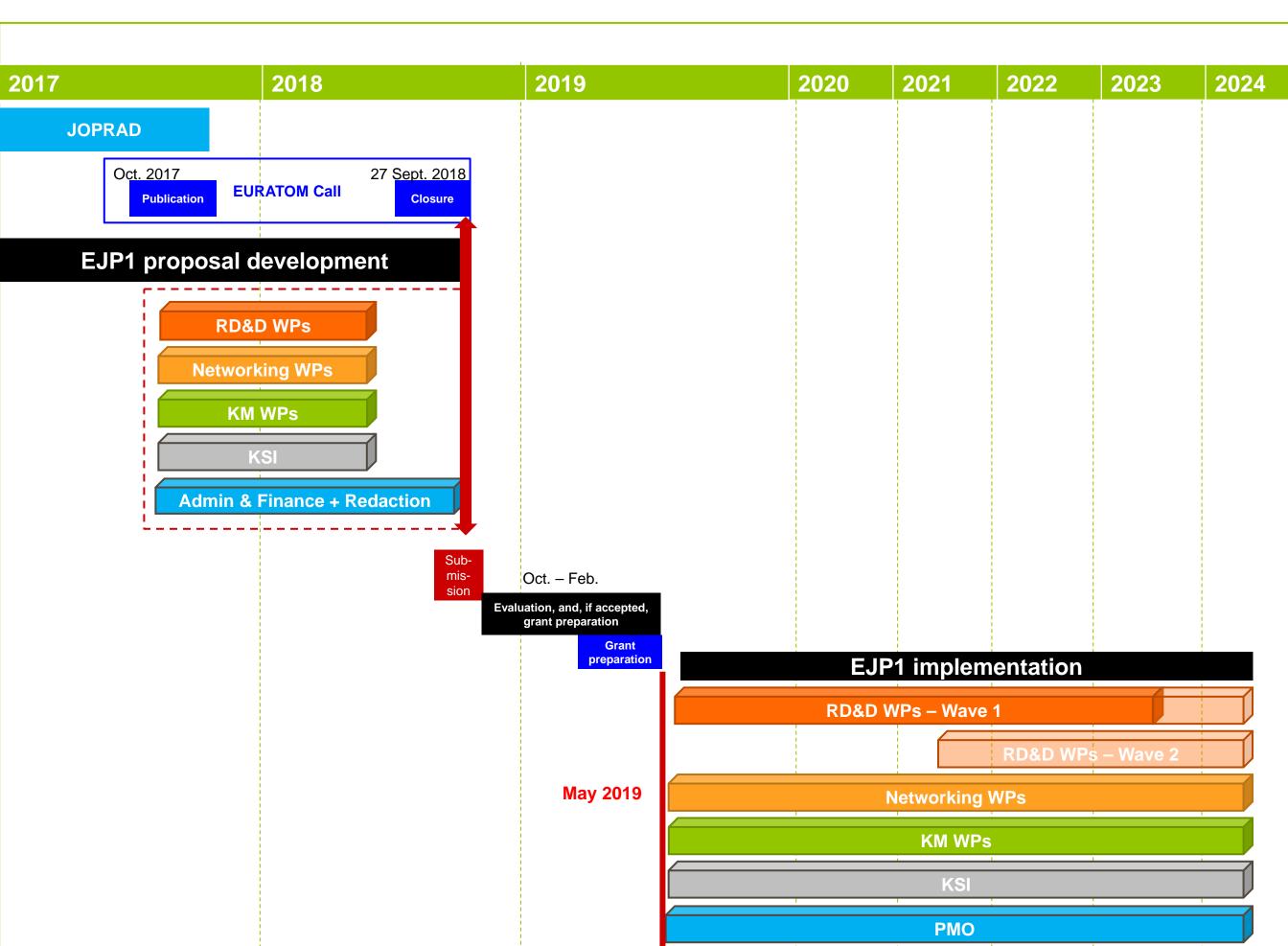
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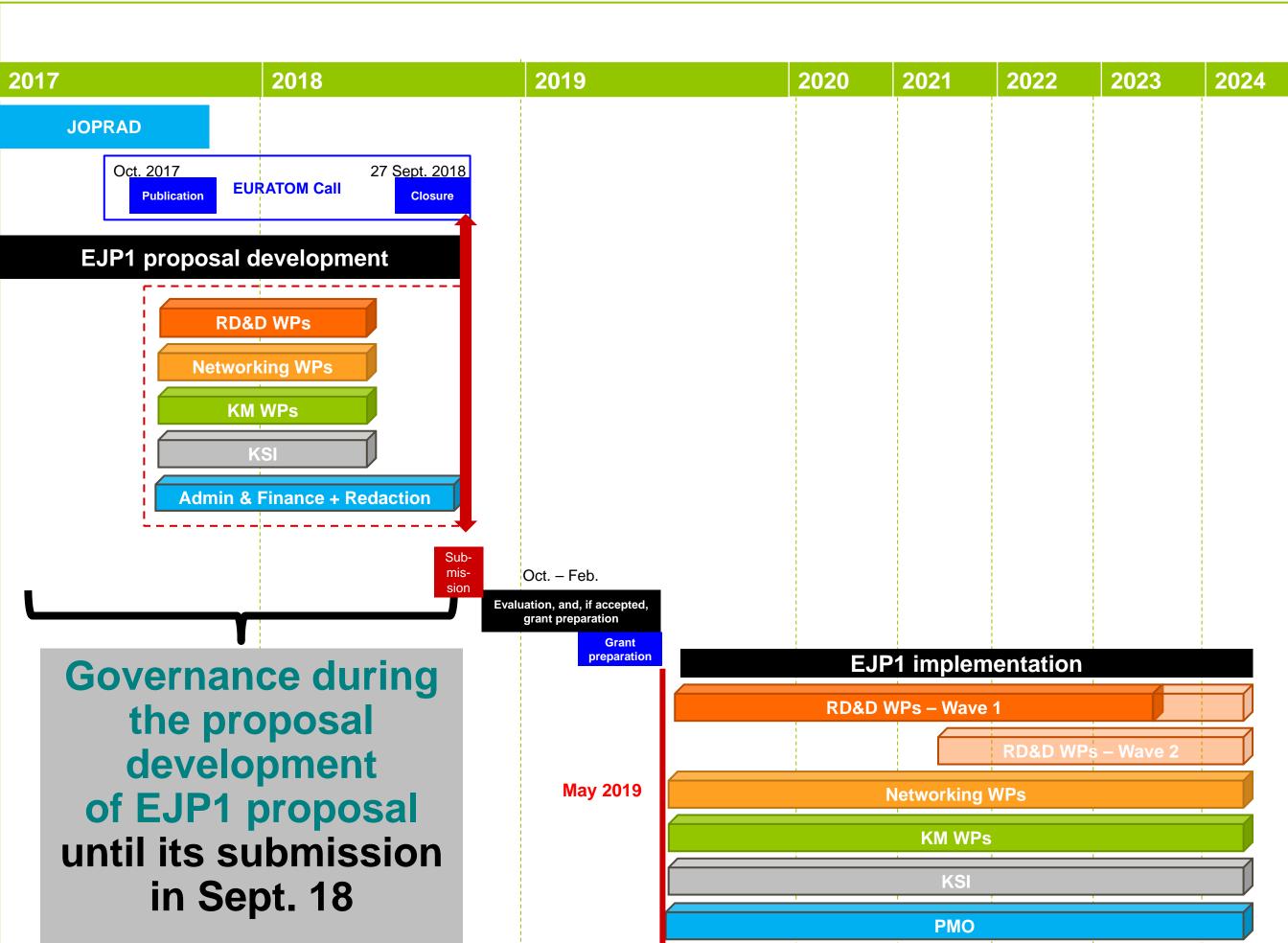
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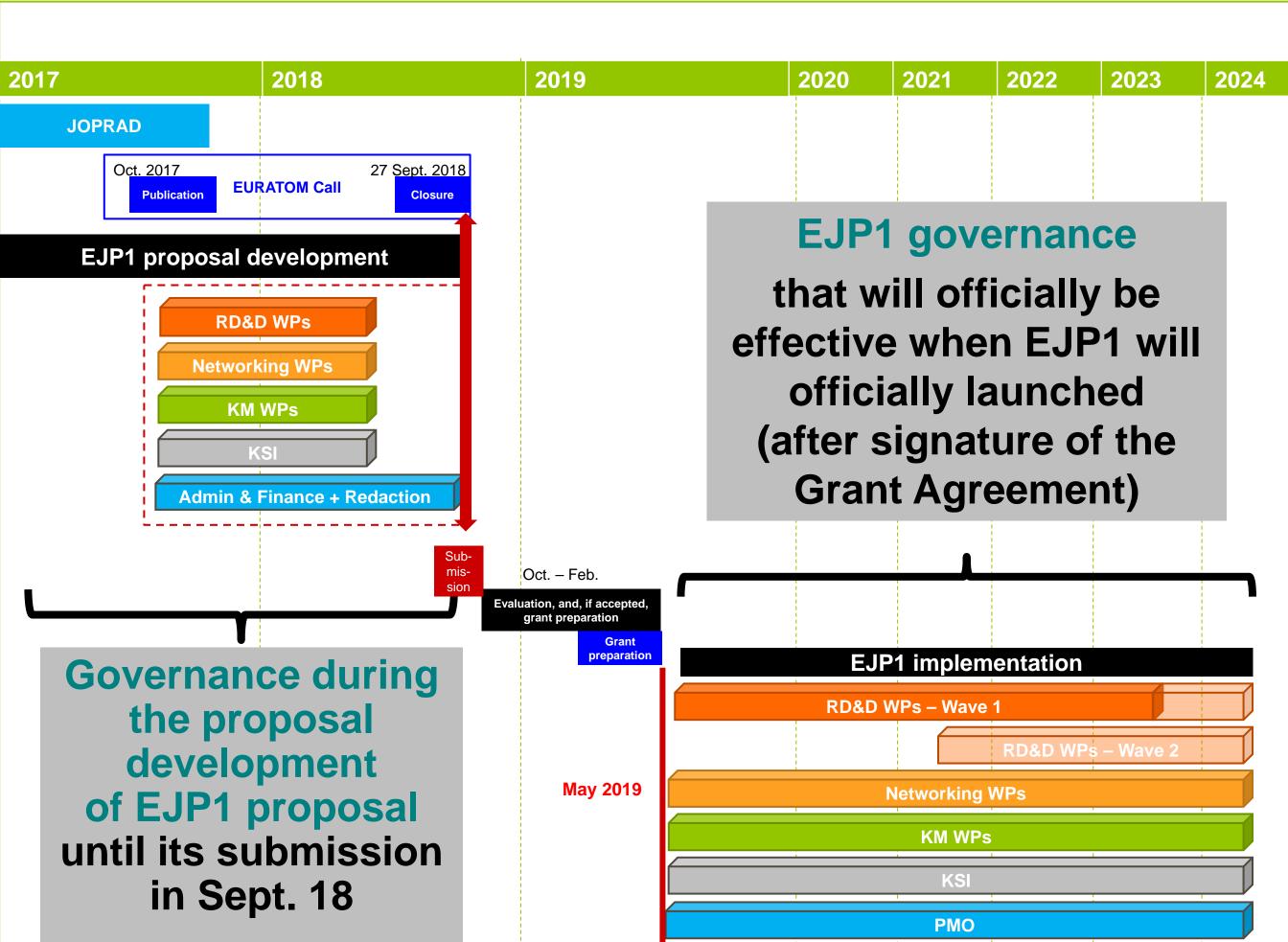
General overview of EJP activities



Governance of the EJP1 proposal development phase







Governance during EJP1 proposal development -Core Group

Since January 2017, a Core Group acts as a <u>catalyser</u> and <u>facilitator</u> in the development of the EJP1 proposal

- Until today it has mainly facilitated the preparation work necessary to launch the development of RDD, Networking and KM activities and to inform Member-States cabout participation rules
- Now EC call has been officially published, and actors progressively being mandated, the proposal preparation work will also focus on the governance of EJP1.
- EJP1 proposal development has to be done collectively (transparency and inclusiveness principles)

Coordinator of the Core Group :

Marie Garcia (Andra)

- 2 WMO representatives
 - Monica Hammarström, SKB, SE
 - Stéphan Schumacher, Andra, FR
- 2 TSO representatives
 - Valéry Detilleux Bel V, BE
 - Elisabeth Salat, IRSN, FR
- 2 RE representatives
 - Bernd Grambow, CNRS, FR
 - Gunnar Buckau, JRC, EU
- 1 representative for small/early stage programmes
 - Jitka Miksova, CVREZ, CZ (TSO)
- 1 CSO representative
 - Gilles Hériard-Dubreuil, Mutadis, FR

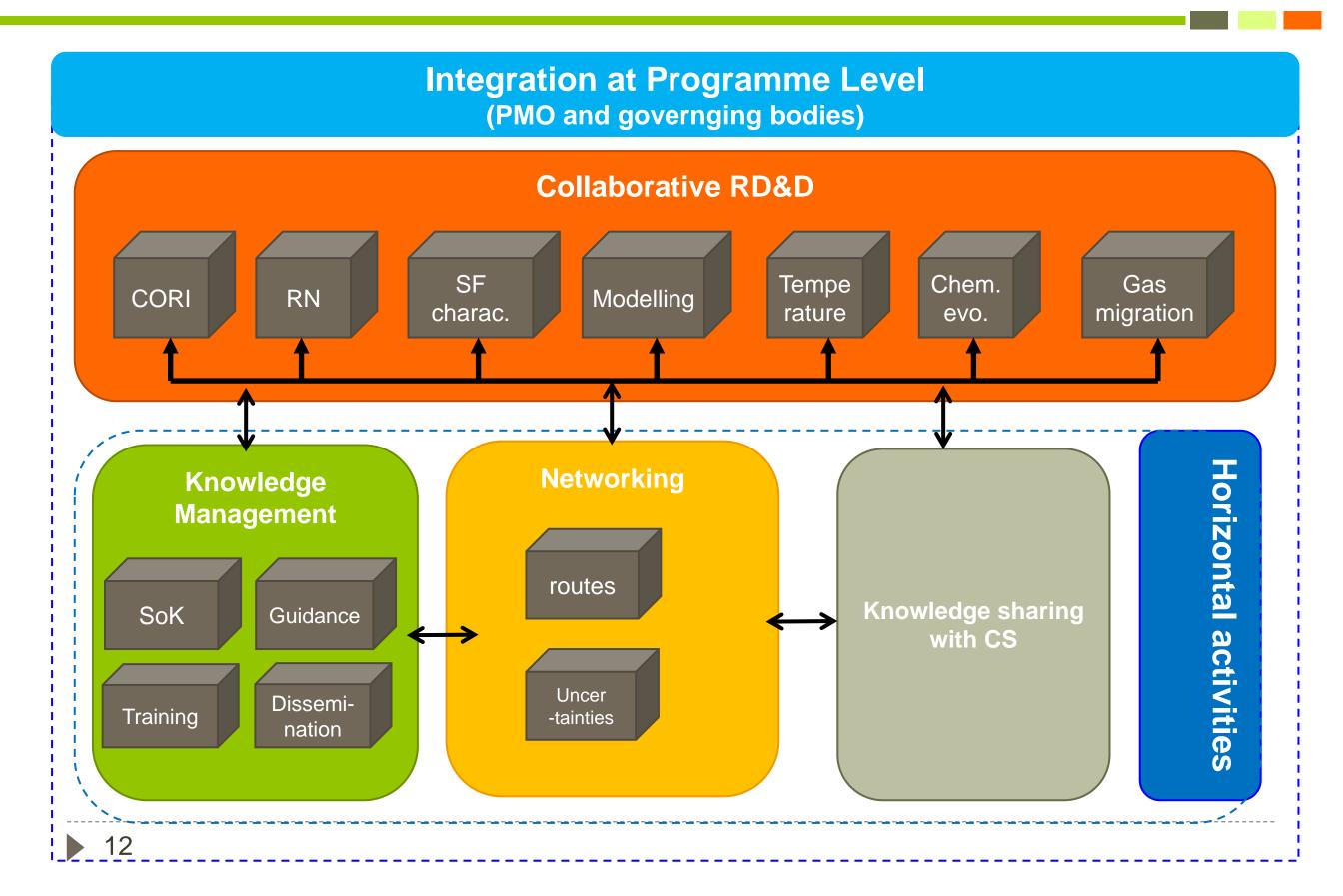
Development of the WPs for the first implementation phase of the Joint Programme (EJP1)

Main requirements for WPs

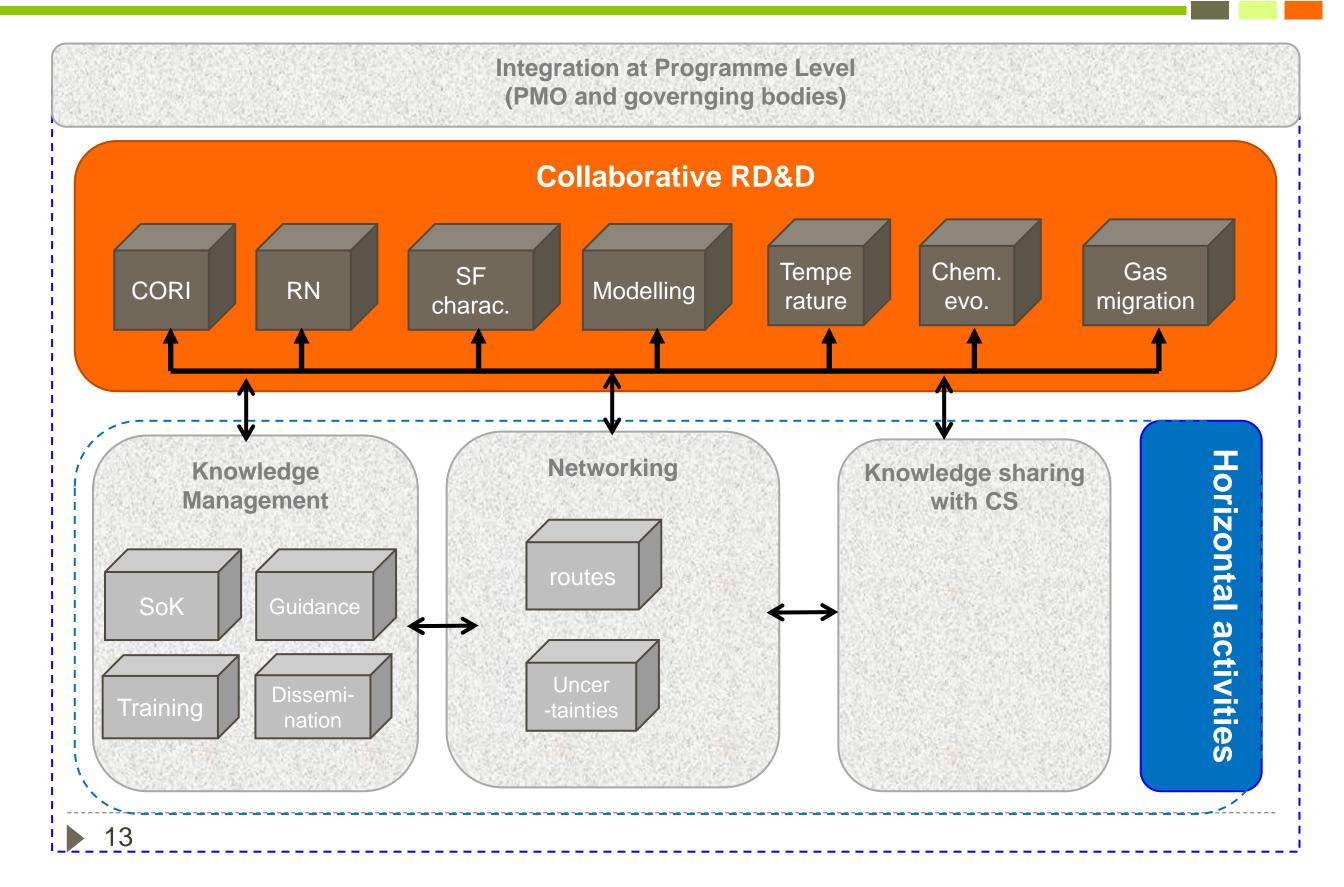
WPs must:

- be in line with the EJP Vision and with the Strategic Research Agenda;
- bring European-added value;
- be primarily built on the scientific content and guided by excellence (beyond the state-of-the-art), implementation needs and safety concerns;
- avoid disconnected, spread or repeated contributions: each contribution should bring complementarity and therefore added-value to the project;
- be **meaningful**, **focused** and **manageable**;
- have clear main and specific objectives, manageable tasks with associated input/output and a list of easy verifiable milestones/deliverables;
- clearly forecast how it will generate/consolidate knowledge;
- ensure interconnections with any other concerned RD&D projects, Networking or Knowledge Management activities within the EJP;
- bring together different categories of actors and address the needs of the different Member States, irrespective of the state of advancement in their national RWM programme.

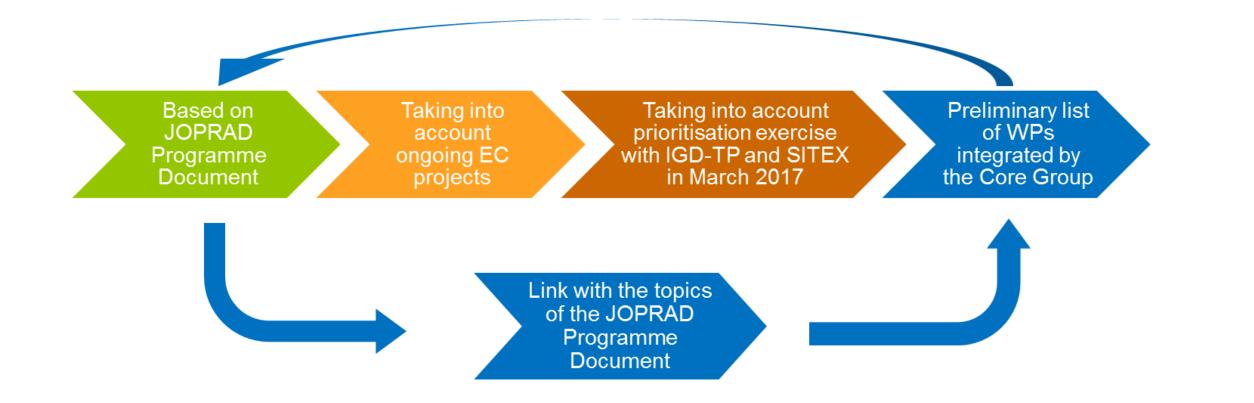
General overview of EJP1 proposal



General overview of EJP1 proposal



How were set up the RDD WPs (1st wave)



2014	2015	2016	2017	2018	2019	2020	2021
		CAST (FP7)					
			Modern2020				
			MIND				
			Cebama				
					CHANCE		
					DISCO		
					THERAMIN		
					Beacon		
					INSIDER		
				_			
			JOPRAD				
			ANNE	TTE			
			SITEX-II				

7 RDD WPs

- 1. Modelling of process couplings and numerical tools applied to PA
 - 2.1.3 Uncertainty Treatment
 - 2.3.1 Performance Assessment Tools
 - 2.3.3 Long-range Transport Models
 - 2.3.4 Multi-scale Reactive Transport Models
 - 2.3.5 Upscaling in Performance Assessment
 - 2.2.4 Up-scaling THMC Models
 - 2.3.6 Heterogeneity

7 RDD WPs

- 1. Modelling of process couplings and numerical tools applied to PA
- 2. Assessment of chemical evolution of ILW and HLW disposal cell
 - 1.1.4 Radionuclide Release from Wasteforms other than Spent Fuel
 - 1.1.5 Geopolymers
 - 1.2.2 Waste Package Interfaces
 - 1.4.1 Bentonite and Other Clay Based Components
 - 1.4.5 Metallic & Cementitious Chemical Perturbations
 - 1.4.7 HLW/ILW Near-field Evolution
 - 2.2.1 THMC Evolution

7 RDD WPs

- 1. Modelling of process couplings and numerical tools applied to PA
- 2. Assessment of chemical evolution of ILW and HLW disposal cell
- 3. Mechanistic understanding of gas migration (mainly in clay-based materials)
 - 1.4.2 Microbial Influence on Gas Generation
 - 1.5.1 Gas Migration though the Excavated Disturbed Zone/EBS and Far-Field
 - 1.6.11 Transport of Volatile Radionuclides ; 1.5.3 Gas Transient

7 RDD WPs

- 1. Modelling of process couplings and numerical tools applied to PA
- 2. Assessment of chemical evolution of ILW and HLW disposal cell
- 3. Mechanistic understanding of gas migration (mainly in clay-based materials)
- 4. Influence of temperature on clay-based material behaviour
 - 1.4.1 Bentonite and Other Clay Based Components
 - 2.2.1 THMC evolution

7 RDD WPs

- 1. Modelling of process couplings and numerical tools applied to PA
- 2. Assessment of chemical evolution of ILW and HLW disposal cell
- 3. Mechanistic understanding of gas migration (mainly in clay-based materials)
- 4. Influence of temperature on clay-based material behaviour
- 5. Cement-Organics-Radionuclide-Interactions
 - 1.6.2 Sorption, Site Competition, Speciation and Transport
 - 1.6.4 Transport of Strongly Sorbing Radionuclides
 - 1.6.6 Organic-Radionuclide Migration
 - 1.6.10 Ligand-Influenced Transport Modelling

7 RDD WPs

- 1. Modelling of process couplings and numerical tools applied to PA
- 2. Assessment of chemical evolution of ILW and HLW disposal cell
- 3. Mechanistic understanding of gas migration (mainly in clay-based materials)
- 4. Influence of temperature on clay-based material behaviour
- 5. Cement-Organics-Radionuclide-Interactions
- 6. Fundamental understanding of radionuclide mobility
 - 1.6.1 Chemical Thermodynamics
 - 1.6.2 Sorption, Site Competition, Speciation & Transport
 - 1.6.3 Incorporation of Radionuclides in Solid Phases
 - 1.6.4 Transport of Strongly Sorbing Radionuclides
 - 1.6.5 Effects of microbial perturbations on radionuclide migration
 - 1.6.8 Colloids influence on radionuclide migration
 - 1.6.9 Redox Influence on Radionuclide Migration
 - 1.6.10 Ligand-Influenced Transport Modelling

7 RDD WPs

- 1. Modelling of process couplings and numerical tools applied to PA
- 2. Assessment of chemical evolution of ILW and HLW disposal cell
- 3. Mechanistic understanding of gas migration (mainly in clay-based materials)
- 4. Influence of temperature on clay-based material behaviour
- 5. Cement-Organics-Radionuclide-Interactions
- 6. Fundamental understanding of radionuclide mobility
- 7. Spent Fuel characterization and evolution until disposal
 - 1.1.10 Spent Fuel Release Processes
 - 1.1.2 Non-Destructive Assay Techniques
 - 1.3.2 Impact of extended storage on waste packages
 - 2.4.5 Interim Storage Facility Safety

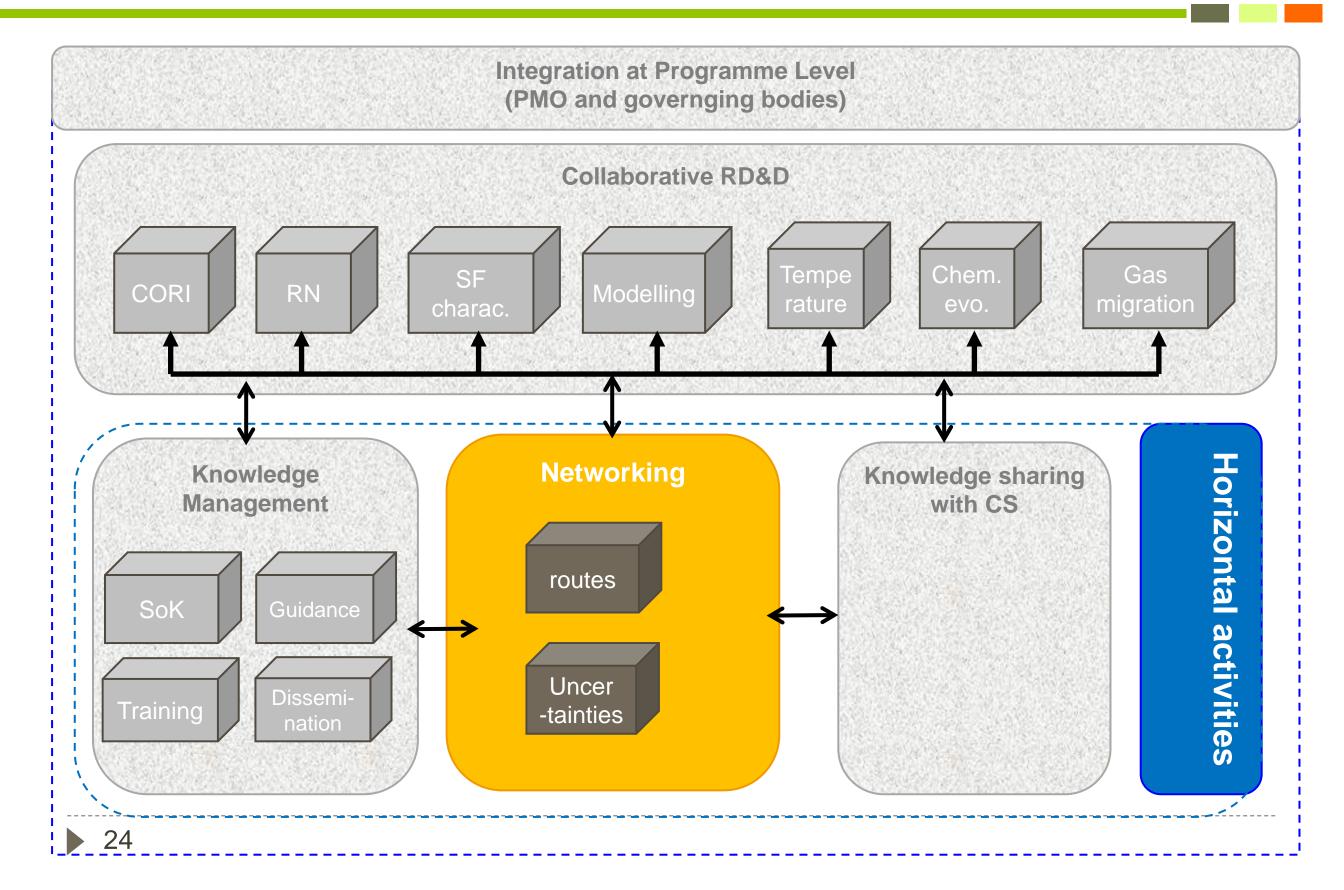
RDD WPs - 1st meetings

- A Call for Interest was then issued in April 2017 to collect interest/ potential contributions by the different actors
 - The 7 WPs received high level of interest
- 7 Working Groups were established in June 2017
- First meetings were held in September, objectives:
 - Gather all potential contributors
 - Remind the objectives of the EJP, including rules for participation (as Beneficiary or LTP)
 - Start outlining of the WP
 - Establish the Coordination Team for the WP development
 - > 1 WP Leader and **2 sub-coordinators (repr.** WMO, TSO, RE)
 - Facilitate and coordinate the development of the WP proposal
 - Make sure that the WP meets the recommendations
 - Regularly report to and exchange with the Core Group in order to ensure interactions with other EJP1 activities
 - Identify next steps for the WPs' development

RDD WPs – coordination teams (as of today)

Work packages under development	Coordination Teams			
Modelling of process couplings and pumprical tools	F. Claret	BRGM	RE	FR
Modelling of process couplings and numerical tools	A Rübel	GRS	RE	DE
applied to PA	G. Pépin	Andra	WMO	FR
Assessment of chemical evolution of ILW and HLW	D. Jacques	SCK CEN	RE	BE
disposal cell	E. Holt	VTT	TSO	FI
uisposai ceii	C. Martin	Andra	WMO	FR
Mechanistic understanding of gas transport in clay	X. Sillen	ONDRAF	WMO	BE
materials	JD. Barnichon	IRSN	TSO	FR
materials	E. Jacops	SCK-CEN	RE	BE
Influence of temperature on clay-based material	M.Olin	VTT	TSO	FI
behaviour	J. Svoboda	CTU	RE	CZ
	G. Armand	Andra	WMO	FR
	M. Altmaier	KIT INE	RE	DE
Cement-Organics-Radionuclide-Interactions	P. Henocq	Andra	WMO	FR
	T. Missana	CIEMAT	TSO	ES
	D. Bosbach	FZJ	RE	DE
Fundamental understanding of radionuclide mobility	V. Havlova	UJV	RE	CZ
	S. Churakov	PSI	TSO/RE	CH
Spont Fuel characterization and evolution until	P. Jansson	Uppsala	RE	SE
Spent Fuel characterization and evolution until	S. Caruso	NAGRA	WMO	CH
disposal	J. Cobos	CIEMAT	TSO	ES

General overview of EJP1 proposal



Networking WPs

- Understanding of uncertainty, risk and safety
- Waste management routes in Europe from cradle to grave
- The Networking WP on Uncertainty has been suggested by TSOs and has received interest from WMOs, REs and CSOs, therefore it has been included in the first wave.
- The networking WP on Management Routes has been added following JOPRAD Prog. Doc. Workshop (London) to meet expectations from small / early stage programmes.

Constitution of Networking WPs (1st wave)

2 Networking WPs

- 1. Understanding of uncertainty, risk and safety
- 1.1.1 Inventory Uncertainty
- 1.7.2 Geological Uncertainties
- 2.1.3 Uncertainty Treatment
- 3.1 Site Uncertainty Treatment
- Socio-political confidence building themes:
 - Safety culture
 - Uncertainty, Epistemology and Social Trust
 - Socio-technical hybridization & aggregating a diversity of people, stakeholder engagement
- + All high priority subdomains addressing uncertainties, e.g.:
 - 1.1.4 Radionuclide Release from Wasteforms other than Spent Fuel
 - 1.3.2 Impacts of Extended Storage on Waste Packages
 - ▶ 1.5.1 Gas Migration through the Excavated Disturbed Zone/EBS and Far-Field
 - 1.6.1 Chemical Thermodynamics
 - 1.6.9 Redox influence on Radionuclide Migration
 - 1.6.10 Ligand-Influenced Transport Modelling

Constitution of Networking WPs (1st wave)

2 Networking WPs

- 1. Understanding of uncertainty, risk and safety
- 2. Waste management routes in Europe from cradle to grave
- 1.1.1 Inventory uncertainty
- 1.1.2 Waste Characterisation Techniques
- 1.1.3 Non-mature and Problematic Waste Conditioning
- 1.1.4 Radionuclide Release from Wasteforms other than Spent Fuel
- 1.1.5 Geopolymers
- 1.1.7 Chemotoxic species
- 1.1.8 Novel radioactive waste treatment techniques
- 1.2.1 Damages and Re-working packages
- 1.2.2 Waste Package Interfaces
- 1.2.3 alternative HLW/spent-fuel container material development
- 1.3.2 Impacts of Extended Storage on Waste Packages
- > 2.1.6 Waste Acceptance Criteria
- 2.4.5 Interim Storage Facility Safety
- ▶ 3.5 Inventory Collation & Forecasting

Medium level of common interest High level of common interest

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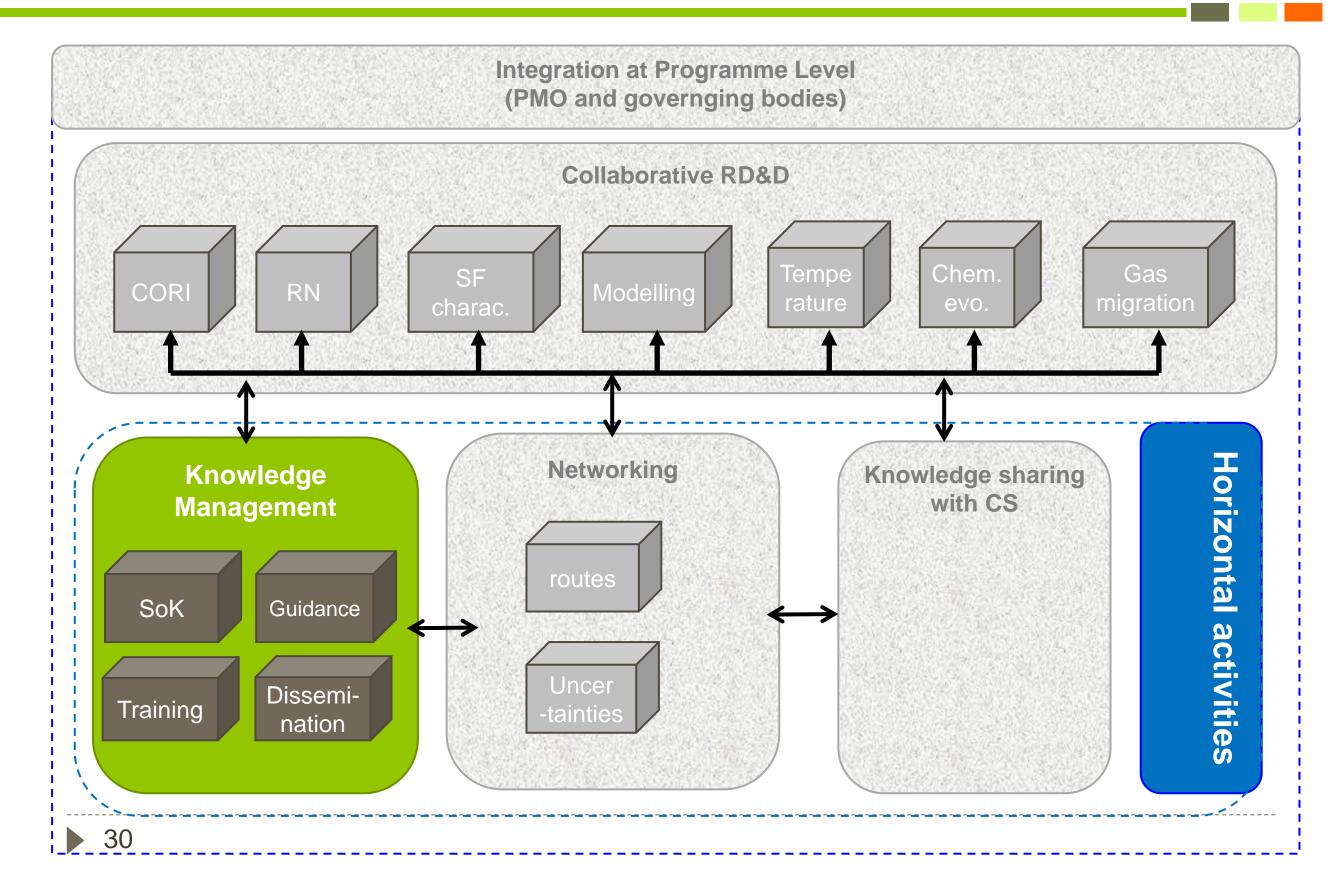
Networking WPs - 1st meetings

- A Call for Interest was then issued in April 2017 to collect interest/ potential contributions by the different actors
 - The 2 WPs received high level of interest
- 2 Working Groups were established in June 2017
- First meetings were in September, objectives:
 - Gather all potential contributors
 - Remind the objectives of the EJP, including rules for participation (as Beneficiary or LTP)
 - Start outlining of the WP
 - Establish the Coordination Team for the WP development
 - > 1 WP Leader and **2 sub-coordinators (repr.** WMO, TSO, RE)
 - Facilitate and coordinate the development of the WP proposal
 - Make sure that the WP meets the recommendations
 - Regularly report to and exchange with the Core Group in order to ensure interactions with other EJP1 activities
 - Identify next steps for the WPs' development

Networking WPs - coordination teams (as of today)

Work packages under development	Coordination Teams			
	V. Wasselin	IRSN	TSO	FR
Waste management routes in Europe from cradle to grave	C. Johansson	SKB	WMO	SE
gi di t	A. Savidou	NCRS demokritos	RE	GR
	F. Lemy	Bel V	TSO	BE
Understanding of uncertainty, risk and safety	A.Goebel	BGE	WMO	DE
	A. Constantin	RATEN	RE	RO

General overview of EJP1 proposal



JP – EC expectations regarding KM

- The EURATOM WP2018 Call clearly states:
 - development of **State-of-the-art documentation** (e.g. text books),
 - guidance documents for planning and implementing research,
 - training courses
 - hands-on-training via mobility measures
 - represent the EJP in areas of competence in international events and forums

JP – KM objectives

 Joint Programme objectives for Knowledge Management (based on JOPRAD D3.6 and D4.4 « Programme Document »)

Make sure that public knowledge generated over past, ongoing and future RD&D is preserved and made accessible.

Make sure that MS with national programmes at early-stage of implementation can take advantage of existing knowledge from MS with advanced national programmes

Ensure that the necessary expertise and skills are maintained through generations of experts by providing training and mobility for researchers.

Disseminate and demonstrate progress, results and added-value of the European Joint Programme to a wide audience.

Preservation / capitalisation of knowledge

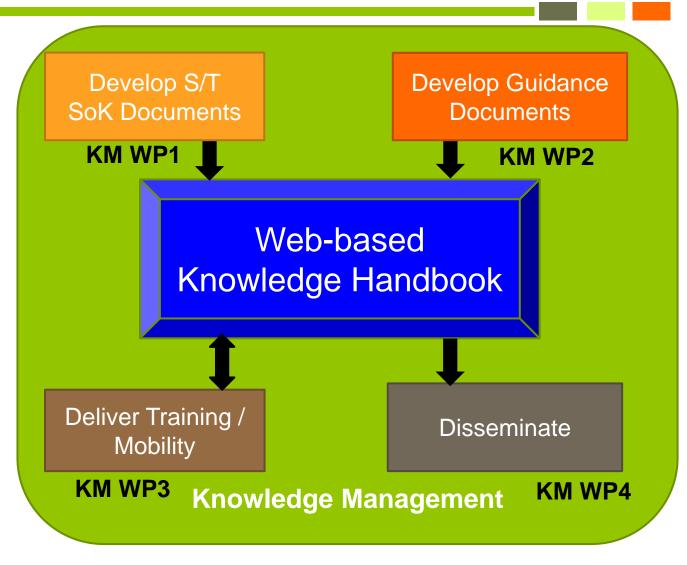
Transfer of knowledge towards M-S with earlystage RWM programme

Transfer of knowledge between generations

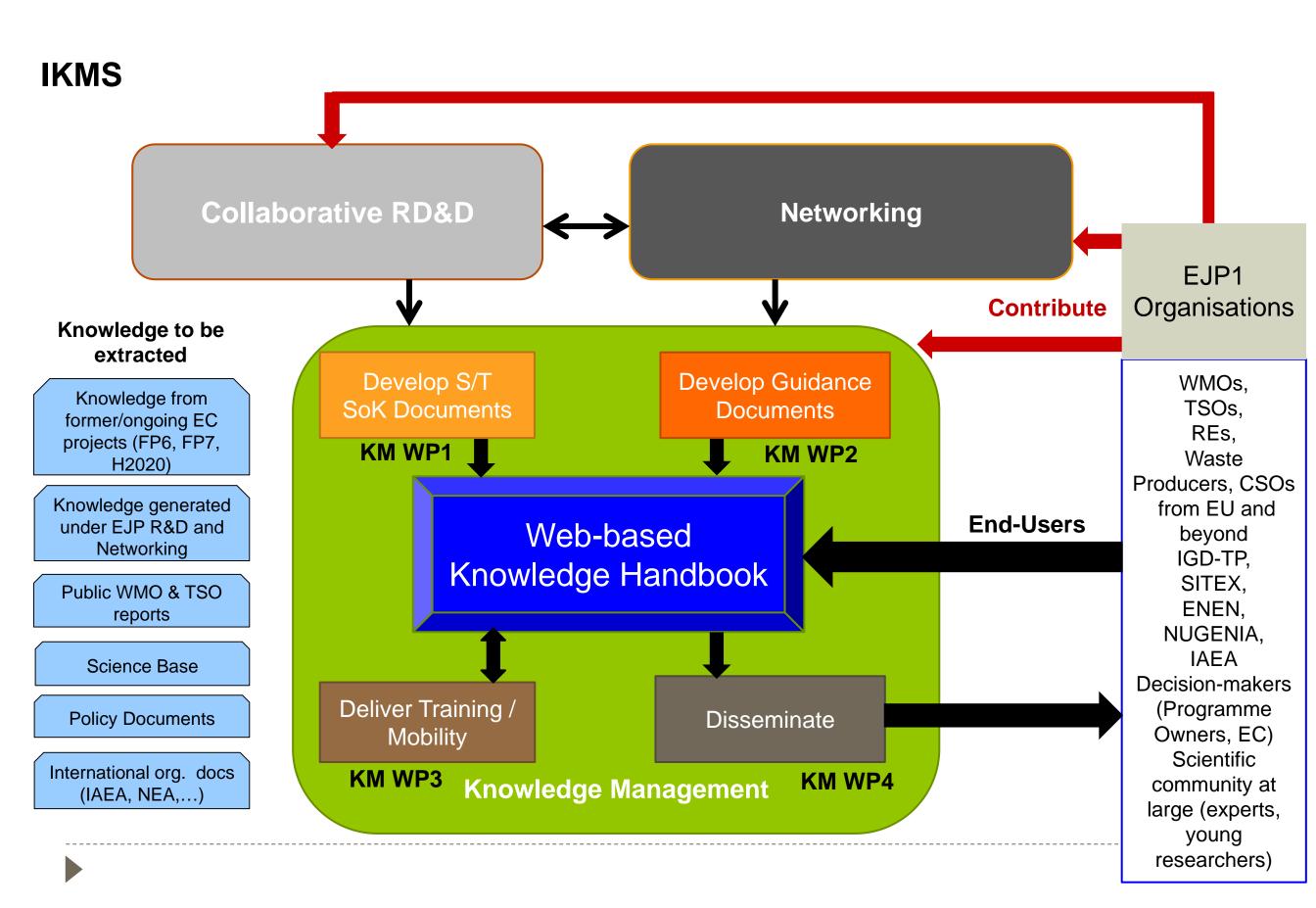
Dissemination of knowledge

Knowledge Management

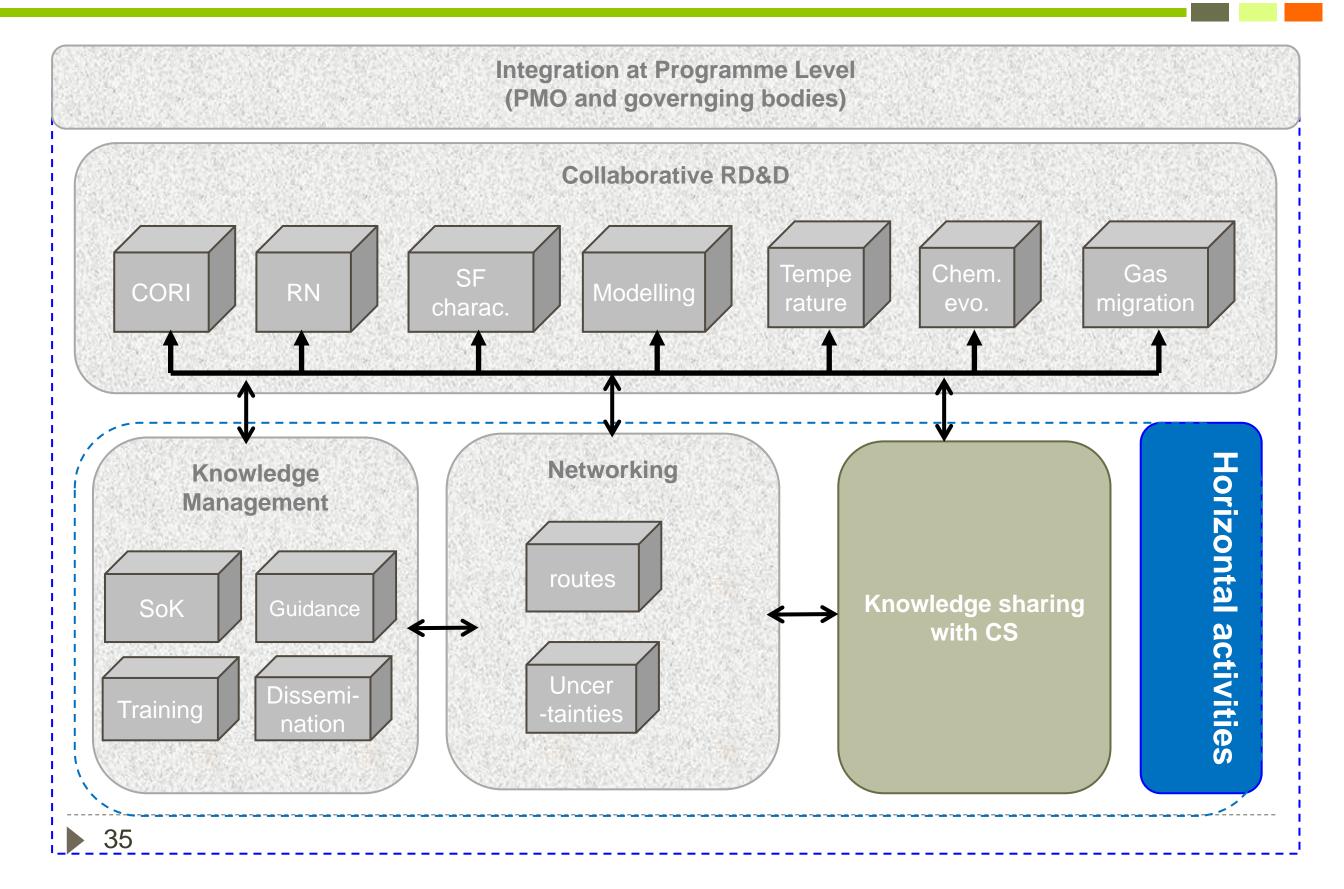
The following 4 WPs have been established directly derivinge from EC EURATOM Call WP2018



- A Call for Interest has been issued in Oct. by the Core Group in order to identify JP Actors that would be interested in developing these WPs
- Organisations had until <u>November 3rd</u> to communicate their willingness to contribute to the development of KM WP(s), and if so to provide the contact detail of the competent person(s) from their organisation.
- The kick-off meeting will be held on November 17th, in Prague, CZ.
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General overview of EJP1 proposal



Knowledge sharing with CS

- RD&D Knowledge Sharing and Interpretation: interactions between scientists and Civil Society Experts will enable Civil Society representatives to access, interpret and evaluate the results of the EJP, to express their expectations and bring their views, and, as final result it will improve the general understanding on issues related to RWMD.
- Participation of Civil Society Experts in Networking activities. This involves interactions with WMOs, TSOs and Research Entities where Civil Society representatives will bring their views and expectations.
- Use experience of SITEX, SITEX II, BEACON, Modern2020

Internal review exercise

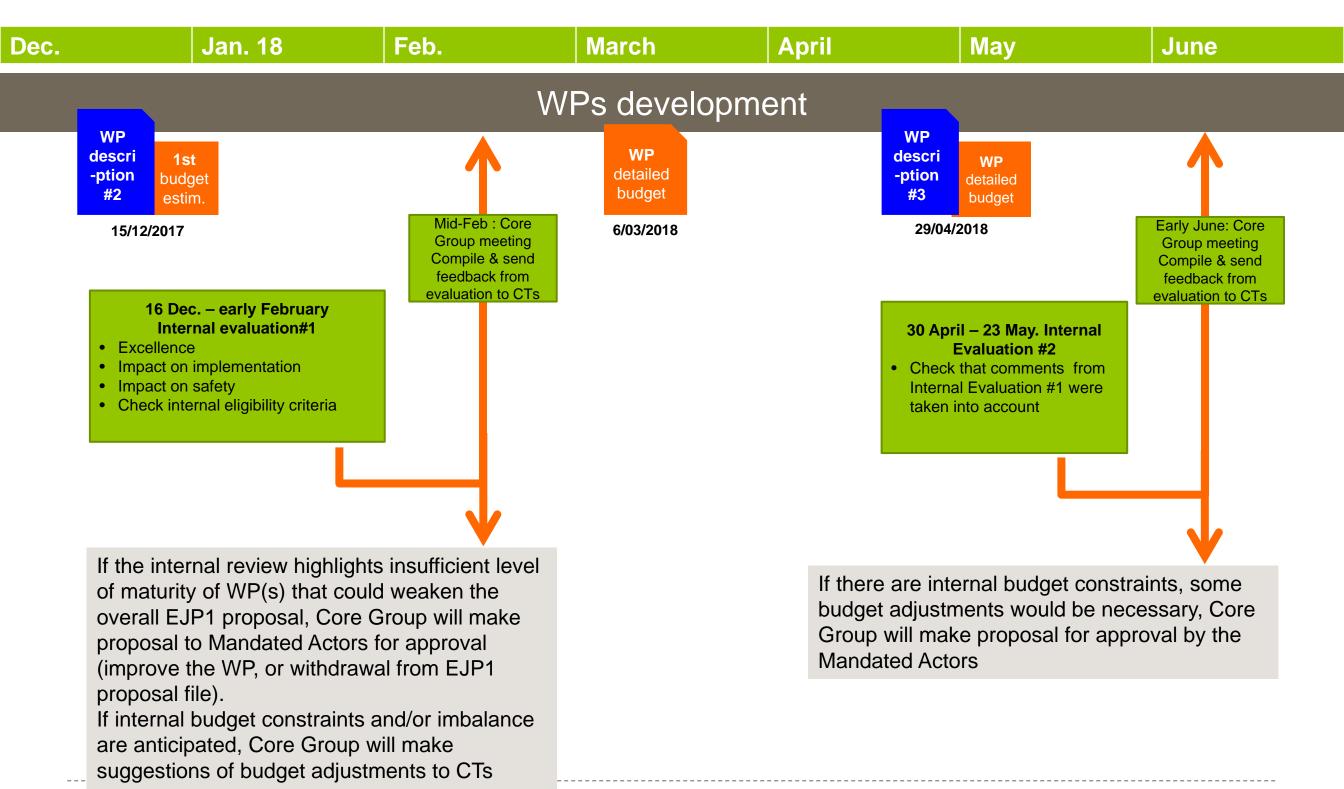
Internal reviews of WP

Internal review/screening exercise n° 1:

Launch: 15 December 2017 - Deadline: early February 2018

Objectives	Who?	
 Check that scientific/technical content is guided by: Scientific excellence Implementation needs Safety concerns 	 Mandated WMOs (coordinated by IGD-TP) Implementers view Mandated TSOs (coordinated by SITEX Network) Safety view Mandated REs (Coordinated by <i>tbd</i>) Scientific value Outcomes of the screening exercise (common statement from each group) to be sent to their Core Group representatives 	
Check that WPs are in line with SRA and overall JP Vision and governing principles	Core Group	
Check that interactions between WPs are well taken into account in each WP	Core Group + WP Leaders	

Internal evaluations - timeline



Consultation by other Actors

 In parallel of the internal Review exercise by EJP1 Mandated Actors, the WP descriptions shall also be sent to programme owners, regulatory bodies, CSOs and Waste Producers for advising comments on the impacts of the WPs

Next steps

16/11/2017

EJP1 – participants

- Confirmation by Programme Owners (Ministries) of Mandated Actors/Beneficiaries by the end of 2017
- For the organisations not mandated as Beneficary, confirmation for being able to participate as Linked Third Parties (with explanation of the preexisting legal links) – first quarter 2018

	Belgium	Bel V		
	Denmark	Danish Decommissioning		
)	Finland	Posiva VTT		
	France	Andra IRSN CNRS CEA		
	Germany	BGE GRS HGF PTKA-WTE		
	Greece	EEAE NCSR Demokritos		
	Lithuania	RATA CPST LEI		
	Netherlands	COVRA NRG TNO		
	Spain	ENRESA CIEMAT		
	Sweden	SKB Uppsala		
	Switzerland	NAGRA PSI		
	Ukraine	Chornobyl R&D Institute SSTC NRS		

EJP COFUND – Grant Agreement model



H2020 Programme

Multi-Beneficiary Model Grant Agreement

European Joint Programme (EJP) Cofund

(H2020 EJP Cofund - Multi)

Version 5.0 18 October 2017

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- http://ec.europa.eu/research/participants/data/ref/h2020/mga /pcp_ppi/h2020-mga-ejp-cofund-multi_en.pdf
- http://ec.europa.eu/research/participants/data/ref/h2020/gran ts_manual/amga/h2020-amga_en.pdf

of 11 Decen	nber 2013			
laying down the rules for participation and diss Programme for Research and Innovation (2014-202				
(Text with EEA relevance)				
THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,	(3) Horizon 2020 should support the achievement and func- tioning of the European Research Area in which researchers, scientific knowledge and technology circulate freely, by strengthening cooperation both between the Union and the Member States, and among			
Having regard to the Treaty on the Functioning of the European Union, and in particular Articles 173, 183, and the second paragraph of Article 188 thereof,	the Member States, in particular through the application of a coherent set of rules.			
Having regard to the proposal from the European Commission,	(4) The rules for participation, exploitation and dissemi- nation in Horizon 2020 laid down in this Regulation ("the Rules") should adequately reflect the recommen-			
After transmission of the draft legislative act to the national parliaments,	dations of the European Parliament in its resolution of 11 November 2010 on simplifying the implementation of the Research Framework Programmes ⁽⁵⁾ , and of the Council with regard to the simplification of the adminis			
Having regard to the opinion of the Court of Auditors $({}^{\rm l}),$	trative and financial requirements of the research framework programmes. The Rules should provide continuity to the simplification measures already imple			
Having regard to the opinion of the European Economic and Social Committee (²),	mented under Decision No 1982/2006/EC of the European Parliament and of the Council (⁶). They should take up the recommendations made in the fina			

Official Journal of the European Union

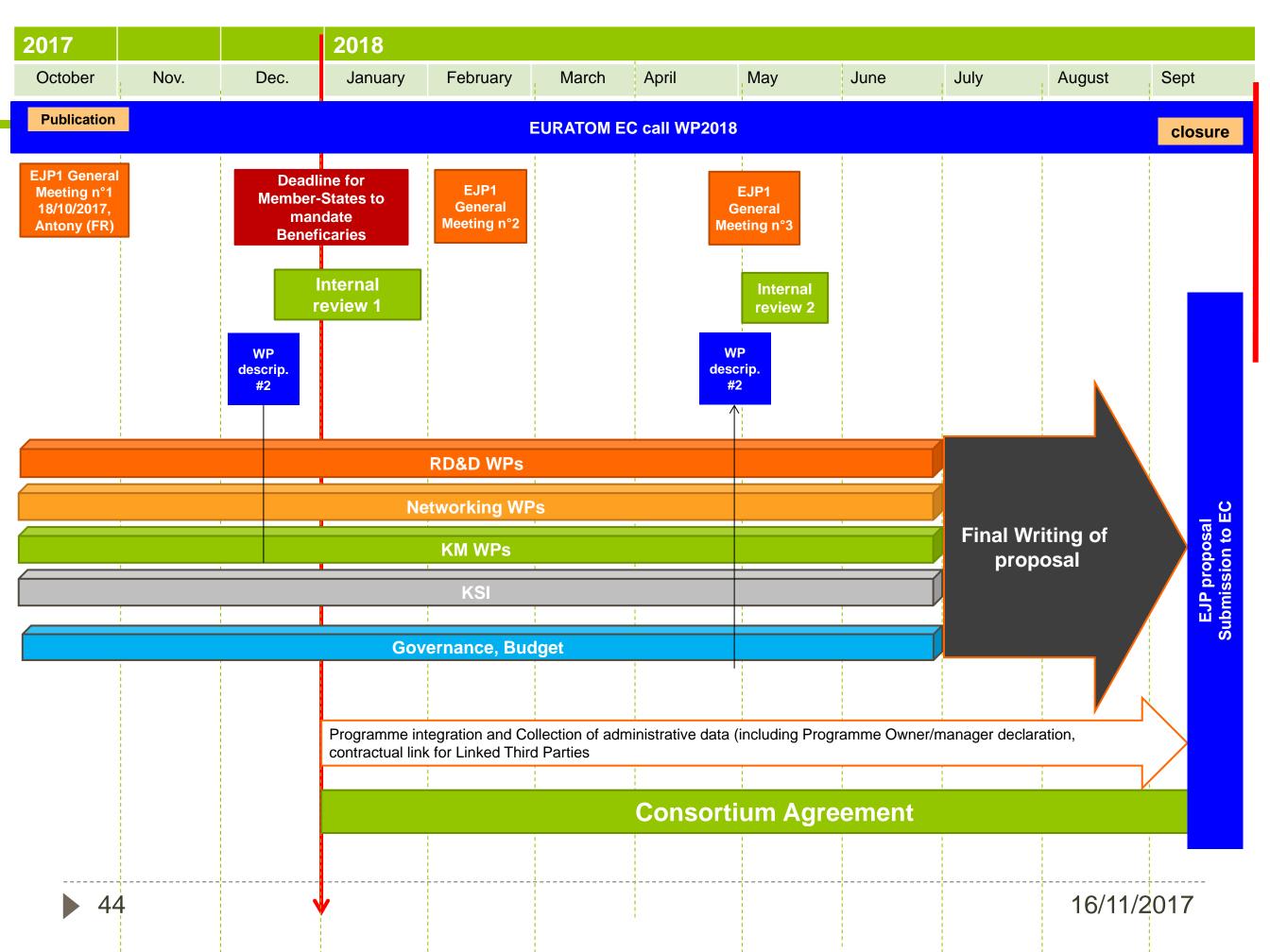
L 347/81

Horizon 2020 Rules for Participation

EN

20.12.2013

http://ec.europa.eu/research/participants/data/ref/h2020/legal_basis/rules_part icipation/h2020-rules-participation_en.pdf



Next steps

RDD / Networking WPs

- Continue interactions within and development of each WP, plan further meetings
- An update of the WP description is requested by the Core Group by December 15th, including
 - More detailed tasks (incl. Contributors and estimated man-months)
 - Foreseen deliverables
 - Links with other RDD / Networking WPs
 - Links with Knowledge Management WPs
 - Links with Knowledge Sharing with Civil Society
- The internal review/screening exercise n°1 will be done on the basis of these WPs' descriptions (January 2018)
- Further development and refinement of the WPs (integration of comments of the 1st review exercise)

Knowledge Management

- Kick off meeting for KM Work Packages
 - 17th November, Prague, CZ

Governance scheme

- The Governance scheme and mechanisms will be developed by Beneficiaries (Mandated Actors), work will be facilitated by the Core Group
 - Early 2018

General EJP1 preparation meeting n°2

First quarter 2018 (to be announced soon)

Thank you for your attention

Contact: <u>marie.garcia@andra.fr</u> <u>stephan.schumacher@andra.fr</u> <u>RWMD-EJP1@andra.fr</u>