HORIZON 2020

LE PROGRAMME DE RECHERCHE ET D'INNOVATION DE L'UNION EUROPÉENNE

RETOUR D'EXPÉRIENCE SUR LE MONTAGE DE PROJET INFRA-IA STARTING COMMUNITIES

Projet SmartCow, J.Levin (INRA)
Projet EU_FT-ICR_MSC, Rolando (CNRS)

Journée nationale d'information – 17/10/2017, Paris (MESRI)

HORIZON 2020 LE PROGRAMME DE RECHERCHE ET D'INNOVATION DE L'UNION EUROPÉENNE

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RÉPUBLIQUE FRANÇAISE

SmartCow
Retour d'expérience

Jonathan Levin

SmartCow

An integrated infrastructure for increased research capability and innovation in the European cattle sector
2018-2022
Coordinator René Baumont

Topic INFRAIA-02-2017
(Starting Communities)
Provisional starting date : 1st February 2018













Un projet d'infrastructure n'est pas un projet qui vise à résoudre une question scientifique

Three types of activities in INFRAIA projects

NA: Networking activities

- to foster a culture of co-operation between research infrastructures, scientific communities, industries and other stakeholders as appropriate,
- and to help develop a more efficient and attractive European Research Area

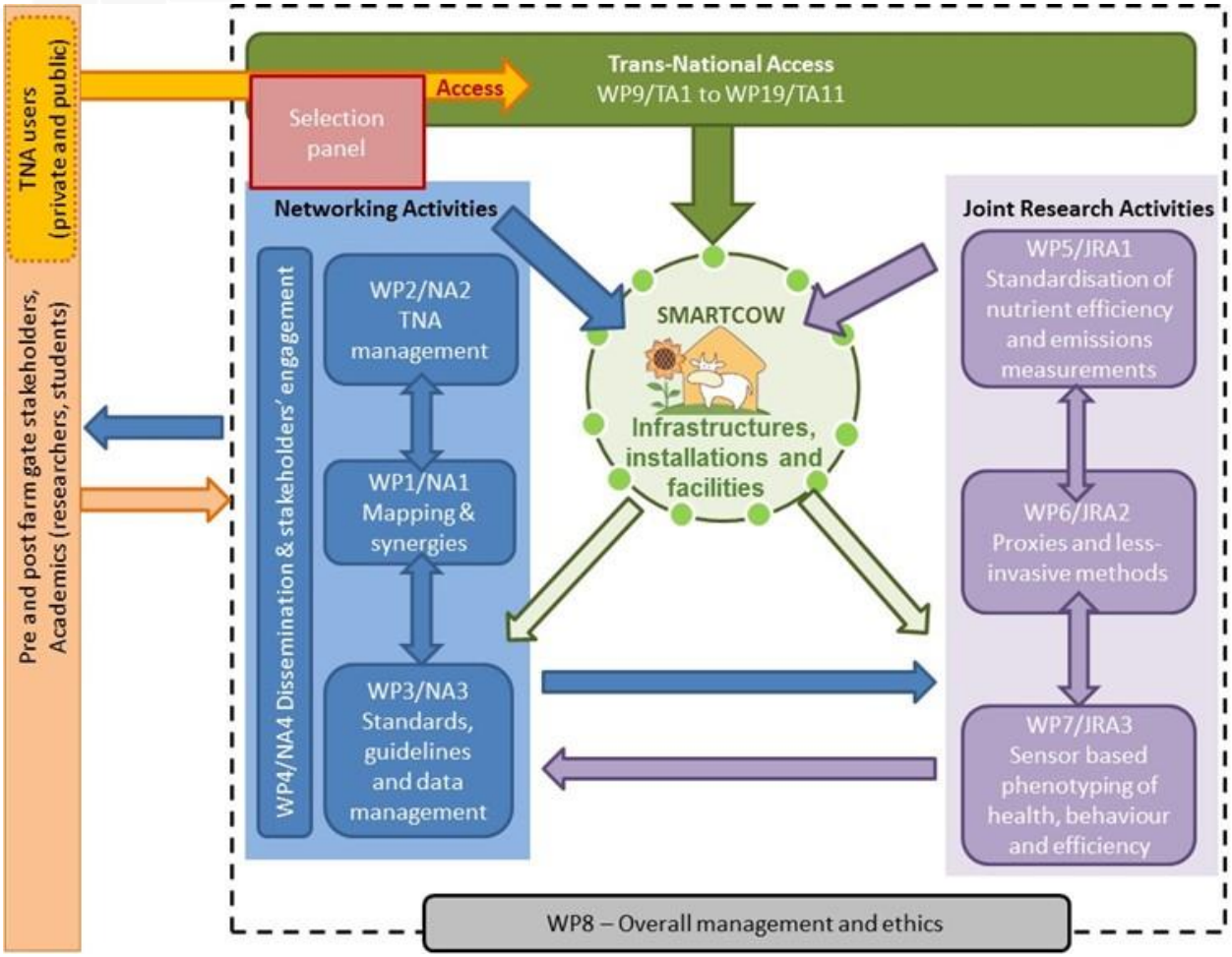
JRA: Joint Research Activities

- to improve, in quality and/or quantity, the integrated services provided at European level by the infrastructures

TNA: Transnational Access (or VA: Virtual Access)

- to support scientific communities in their access to the identified key research infrastructures

Overall organisation of the SmartCow project.



Networking activities

- **An interactive map of national and regional cattle RIs** across Europe (WP1);
- **Inventory of cattle databases and samples banks** (WP1)
- **A TNA program** that places SmartCow RIs at the centre of addressing key European research challenges in a coordinated way (WP2)
- A **cloud-based data platform** to gather and share research data on cattle (WP3)
- A **book of methods** to **harmonise** protocols and define **common guidelines** for research and routine data recordings on cattle (WP3)
- **An improved trait ontology** (ATOL and EOL) to define and disseminate a common language in cattle research (WP3)
- **Effective and sustainable dissemination and knowledge transfer** to stakeholders and **training of a new generation** of scientists, students and technicians to f**oster innovation** (WP4).

Prends le temps de bien travailler le TNA et ses coûts d'accès

SmartCoW TNA: Access to 10 RIs → 20 installations

- Around 2500 dairy and 1000 beef cows
- Diversity of breeds and of environmental conditions
- High quality measurements (feed efficiency, gas emissions, digestion, metabolism…)
- Expertise in animal science, cattle husbandry and research methodologies

- **TNA ≈ 1.5 M€: Cover the cost of 33 experiments ≈ 10000 cow.week**

- Two types of comprehensive experiments

1. Experiments on animals in production focusing on animal performances and trade-offs between functions ;
2. Experiments investigating underlying digestive and metabolic processes on limited amount of animals.

Proposer des JRAs qui améliorent les services de recherche proposés par les infrastructures
Par exemple amélioration des méthodologies.

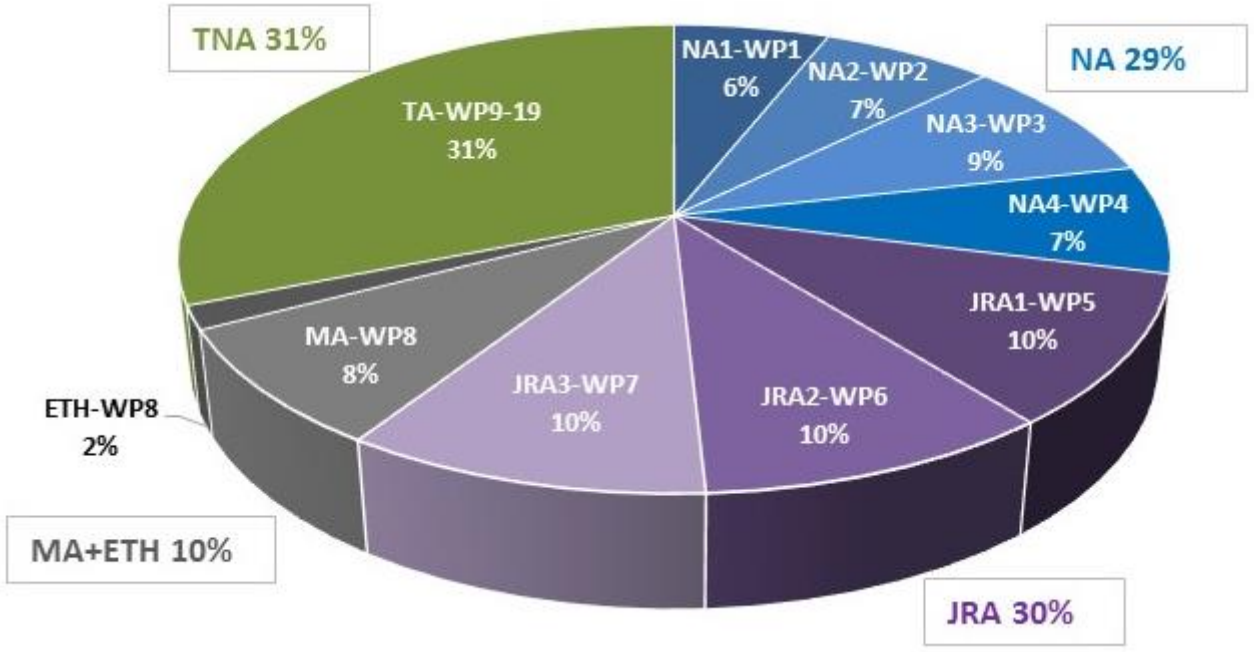
SmartCow Joint research activities

- **Evaluation and refinement the state of the art *in vivo* methods in the field of nutrient efficiency and emissions** of cattle in order to **improve their accuracy and reduce the number of experimental animals** in cattle research (WP5).
- **Development**, where possible, of **proxies** (biomarquers from NIR and MIR technology) **and non-invasive methods** to **increase phenotyping capabilities** and **reduce** constraints on experimental animals (WP6).
- **Development of a multivariate approach from data coming from sensors** in SmartCow infrastructures **to phenotype health, welfare and feed efficiency** in cattle (WP7)

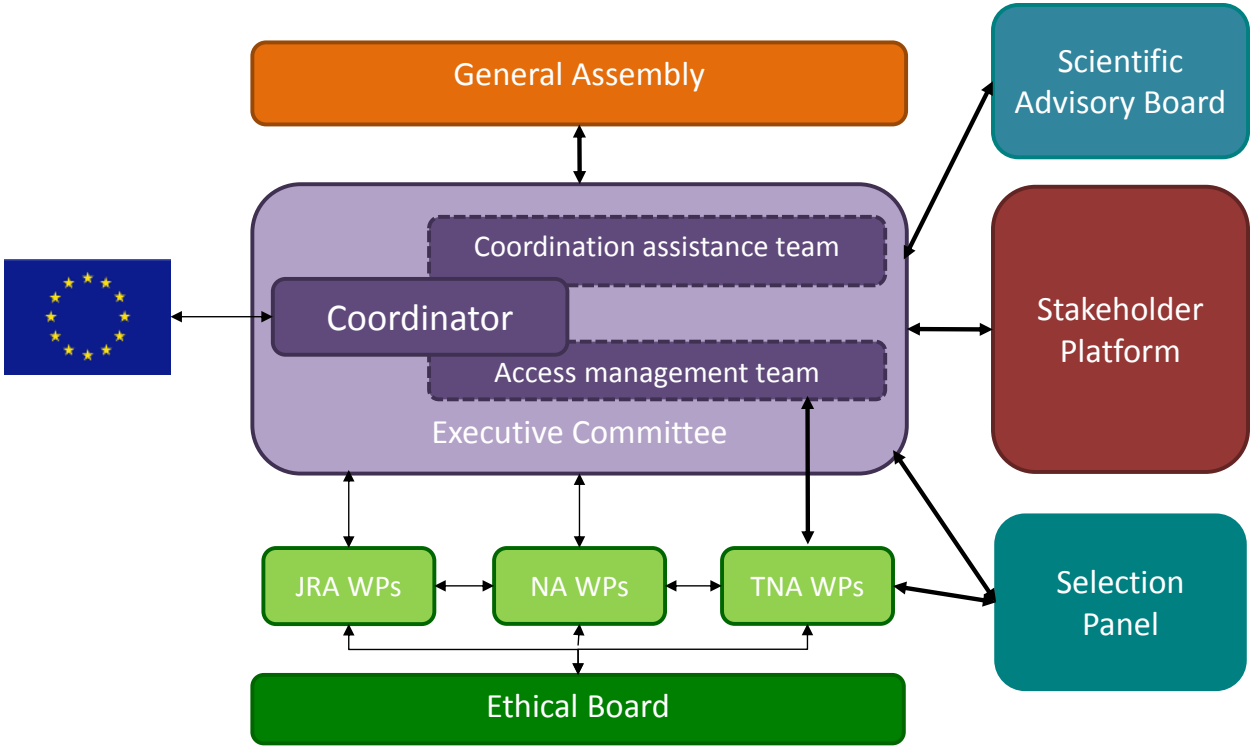
→ ***Implementation of the 3 R (Replace, Reduce, Refine) principles***

Veiller à une bonne répartition des ressources

Budget SmartCow 5M€



Governance

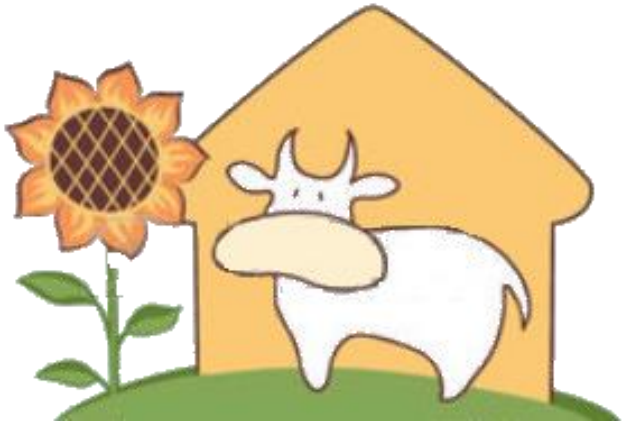

General Assembly
Scientific Advisory Board
Coordination assistance team
Coordinator
Stakeholder Platform
Access management team
Executive Committee
JRA WPs
NA WPs
TNA WPs
Selection Panel
Ethical Board

Evaluation

C’est un appel blanc

Votre projet doit être compréhensible pour tous.

Il peut être évalué par des « experts » qui ne connaissent pas votre domaine



Merci

EU_FT-ICR_MS

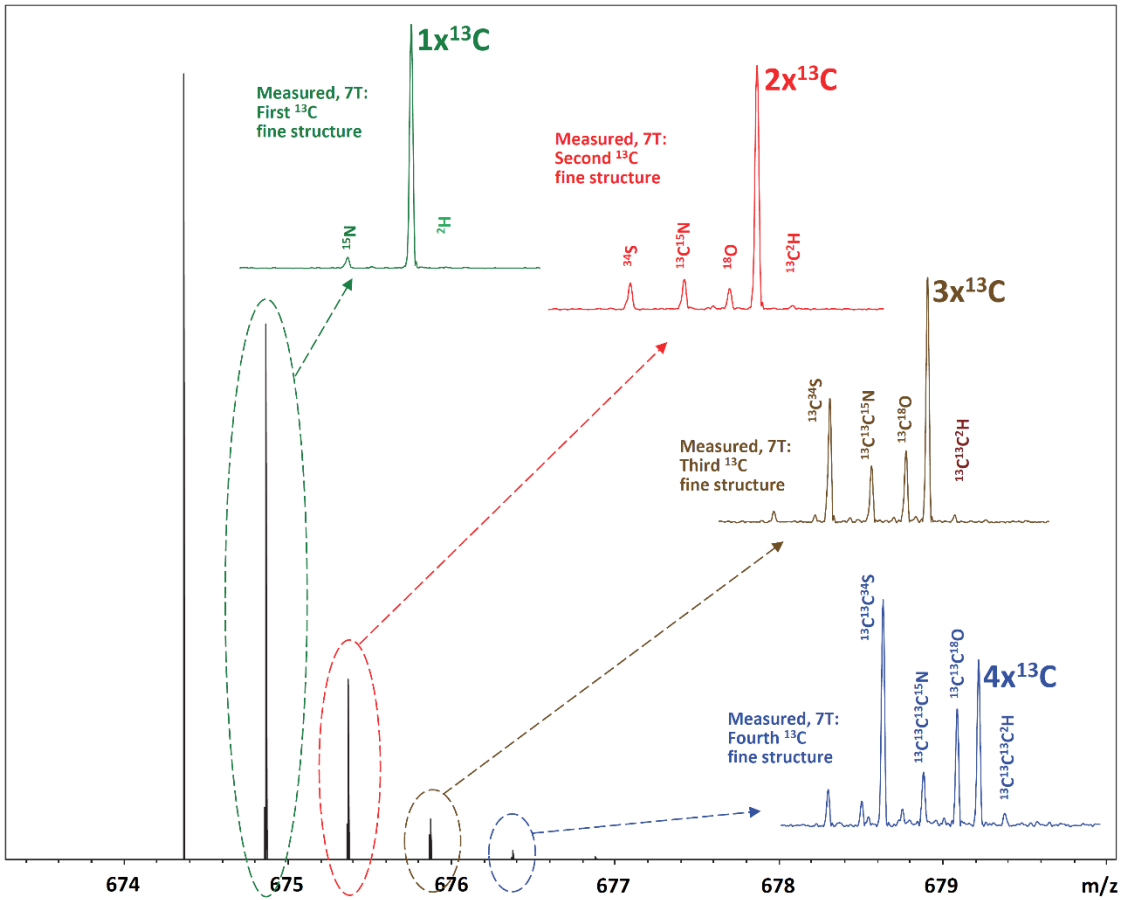
European Network of Fourier-Transform Ion-Cyclotron-Resonance Mass Spectrometry Centers

An INFRA for Starting Communities network

Christian Rolando
Christian.Rolando@univ-lille1.fr
Infrastructures de Recherche
Journée nationale d'information, mardi 17 octobre

Summary

Why an FT-ICR Mass Spectrometers network?



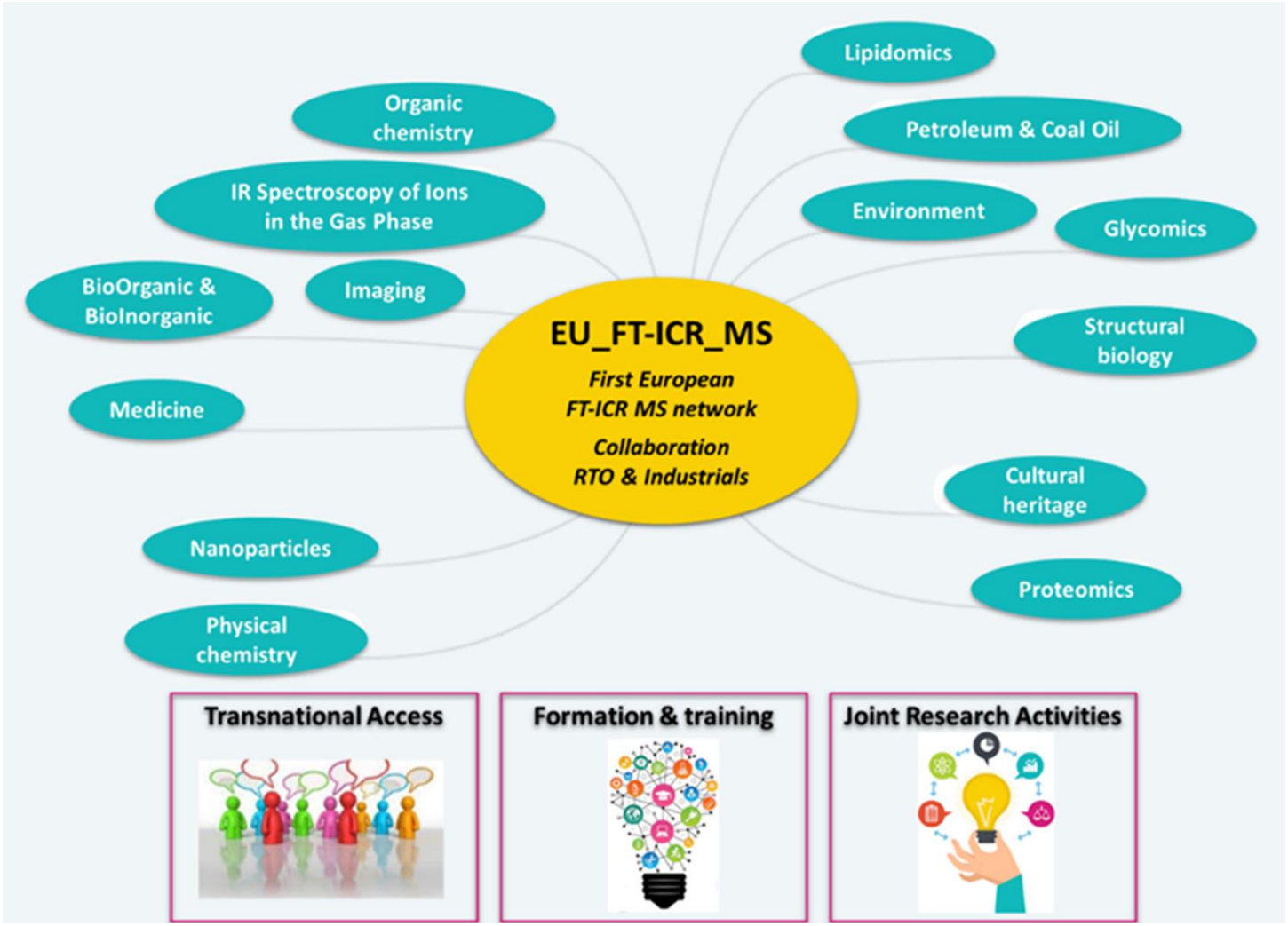
15 Tesla FT-ICR MS at the Czech Academy of Science, Institute of Microbiology (Prague) funded in part with EU ERDF funds (highest commercial magnetic field).

- The most resolving mass spectrometer (× 10 versus the best other MS)
- Ubiquitous use in different scientific field
- Cost between 1.5 and 3 million euros
- But requires a skilled team

Geographical repartition and financial model

- Ten academic centers from 8 European countries and Russia
- 2 SMEs (software development and project management)
- 1 instrumentation company
- A financial model with almost equivalent funding for all academic partners

The site specificities and the different workpackages



And the very important WP **Open Data and *e*-Infrastructure**

The two steps and our evaluation

INFRAIA-02-2017: Integrating Activities for Starting Communities

30 Mar 2016 (First stage): 20 pages only Excellence and Impact

29 Mar 2017 (Second stage):

100 pages Excellence, Impact and dissemination

+ the description of the partners (50 pages, not limited)

The template for the Excellence part of the Second stage is not well adapted to an INFRA call and induces a recursive writing.

Excellence

1.1 Objectives

- Describe the specific objectives for the project, which should be clear, measurable, realistic and achievable within the duration of the project. Objectives should be consistent with the expected exploitation and impact of the project (see section 2).

1.2 Relation to the work programme

- Indicate the work programme topic to which your proposal relates, and explain how your proposal addresses the specific challenge and scope of that topic, as set out in the work programme.

The two steps and our evaluation

Proposal Evaluation Form

European Commission	**EUROPEAN COMMISSION** Horizon 2020 - Research and Innovation Framework Programme	**Evaluation Summary Report - Research and innovation actions**

Criterion 1 - Excellence

Score: **5.00** (Threshold: 3/5.00 , Weight: -)

The main objectives of the project are to develop an European state-of-the-art network enabling high resolution **FT-ICR mass spectrometry providing superior analyses** and offering transnational access (TNA).

The objectives are clearly demonstrated, well explained and justified. The procedure in which the partners with FT-ICR-MS facilities will join forces to offer the **most up-to-date TNA** to the European scientific community is convincingly shown.

The TNA and the JRA will be completed by Network Activities, which are well described and will be performed at three different levels dedicated to different groups.

The proposal addresses **multidisciplinary aspects**. The **coordination with a US infrastructure** is a strong point as well. Additionally, long-term sustainability is also taken into account.

The focus on the quality of the measurement techniques, exchange of expertise as well as establishing **high quality standards** for the community are strong and convincingly described in the proposal.

The two steps and our evaluation

Criterion 2 - Impact

Score: **4.50** (Threshold: 3/5.00 , Weight: -)

The community will be provided with simplified, harmonised access to the state-of-the-art technique, and count on the support of experts. Research organizations and industry will both benefit from the network. **The measures to improve data management as well as training activities are well described in the proposal**.
The involvement of industrial partners who will use the facility in the project and their representation in the Stakeholder Committee will help to enhance dissemination of the results. However, the effective involvement of manufactures is not fully described.
The dissemination and exploitation plans are well presented and include measurable indicators. The communication plan is appropriate.

Criterion 3 - Quality and efficiency of the implementation

Score: **4.00** (Threshold: 3/5.00 , Weight: -)

The work plan is well described. The management plan is well presented, and decision-making structures are adequate to the objectives and
WPs. **The allocation of resources is appropriate and well balanced.**
The participants are quite complementary, with recognized scientific authorities among them. However, the risk management is not described in detail. The innovation and exploitation plans are too generic and lack in details.

Funding the preparatory phase: ANR MRSEI

Montage de réseaux scientifiques européens ou internationaux (MRSEI)

Construction de l'Espace européen de la recherche (EER) et attractivité internationale de la France

Submission on January 2016, acceptation in May 2016

Funding (30 k€) of:

- The European project consulting company (10 k€)
- The meetings of the consortium during the preparatory phase in an easily accessed place
- The travels of the PI for the set-up of the project
- Web site

The project team

French FT-ICR network, FR CNRS 3624
National Research Infrastructure
http://www.fticr.org/
Pr Guillaume VAN DER REST

European project's engineer
In charge of budget and especially TNA
Maude PERIER-CAMBY

European consulting company
Writing assistance and supervision
WP dissemination and management
Céline BLANCHON & Hervé MUGUERA

Look to available documents!

Guidelines for implementing TransNational Access

www.desca-2020.eu/
DESCA 2020 model consortium agreement

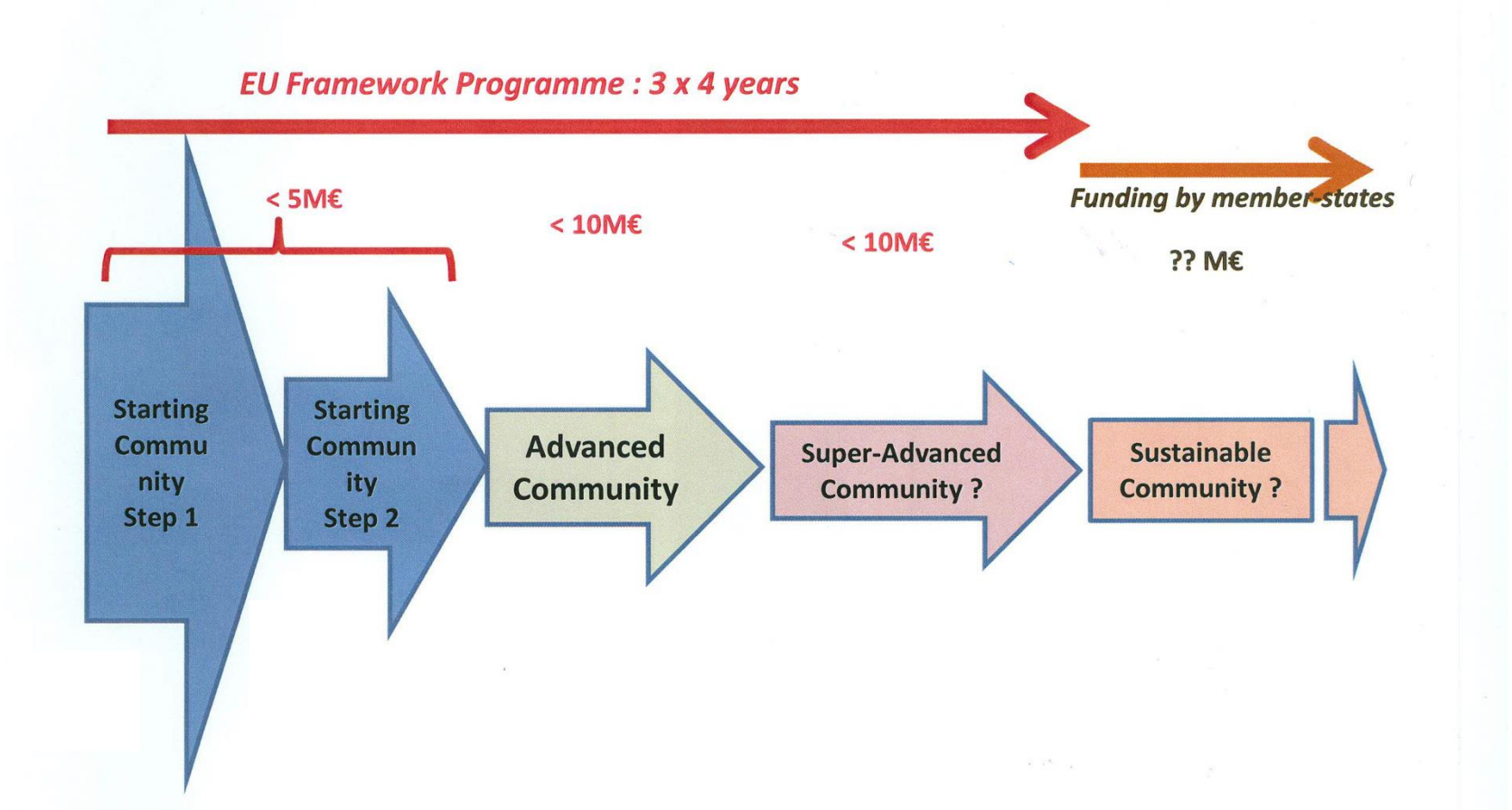
https://portal.meril.eu/meril/
The MERIL (Mapping of the European Research Infrastructure Landscape) portal provides access to a database that stores information about openly accessible research infrastructures (RIs) in Europe, across all scientific domains, including the social sciences and humanities.

https://ec.europa.eu/jrc/en/research-facility/open-access/framework
Access of users to JRC research infrastructures will be regulated by the "Framework of Access to Joint Research Centre physical Research Infrastructures" ('Framework') drafted by the JRC and based on European Charter for Access to Research Infrastructures.

https://ec.europa.eu/research/infrastructures/pdf/2016_charterforaccessto-ris.pdf
European Charter for Access to Research Infrastructures: Principles and Guidelines for Access and Related Services

Think to the future!

The message from **Gaëlle DECROIX** and **Jean-Pierre CAMINADE**



An INFRA starting communities should be seen as a **starting point** and not as an end point…

The EU_FT-ICR_MS at a glance

10 FT-ICR centres
8 different EU countries & Russia

1 high field FT-ICR EU manufacturer
1 software developer SME

1000 days of TNA for the whole project

400 launched projects in 4 years

Schools & short courses
2 End-users & 2 Advanced users schools
10 short courses

Staff exchange
40 weeks

International networking with the 2 US 21 T FT-ICR

Organization of the 2020 European FT MS Conference

Improving the quality of service
Increasing the application fields & Innovative developments

Start: 1st January 2018
Website (project submission): www.eu-fticr.eu