

- » BOOST PERFORMANCE
- » REDUCE COST
- » INCREASE AGILITY
- » ENHANCE CRM
- » SHORTEN TIME TO MARKET
- » DRIVE INNOVATION
- » IMPROVE EFFICIENCY
- » INCREASE ADAPTIVITY
- » ENABLE BUSINESS TRANSPARENCY
- » ENSURE REGULATORY COMPLIANCE



CONSULTING > SOLUTIONS > OUTSOURCING

The eHealth pillar in the FI PPP

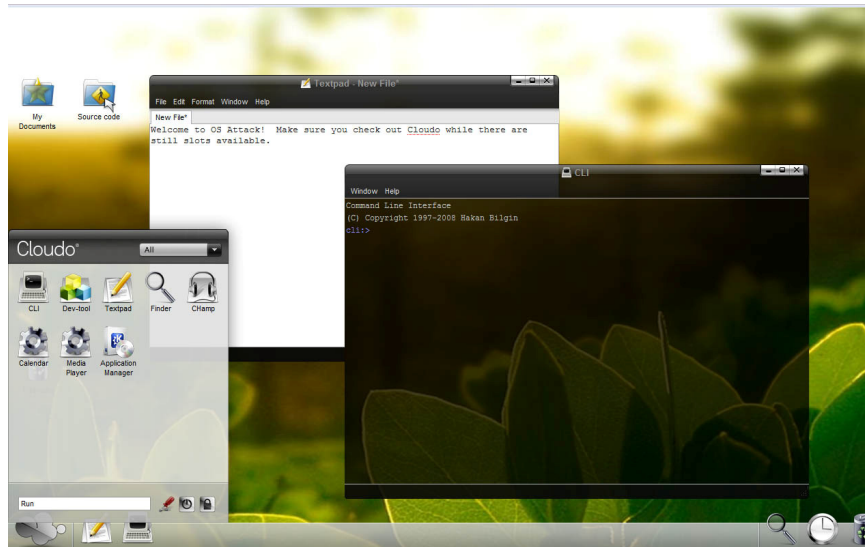
Blanca Jordan – Area Manager – Atos Research & Innovation

Valencia, April 15th 2010

The time of Future Internet



- » It is the time of a large scale action on Future Internet
- » We have to focus on:
 - Addressing high interest/popular subjects → **impact**
 - Offering added value services not available yet → **attractiveness**
 - Tackling **efficiency** as part of the service added value
 - Providing **trust** in the service access environment



Future Internet – Novelty in applications



By creating the effect of a “**virtual intermate**”

»A “internet-linked” friend that replaces you **acting on your behalf**, acquiring knowledge, composing services, and providing assessment or decisions with a light link to you

»In the different appealing matters such as: Transport, Energy, Environments, Leisure, Tourism

And of course....

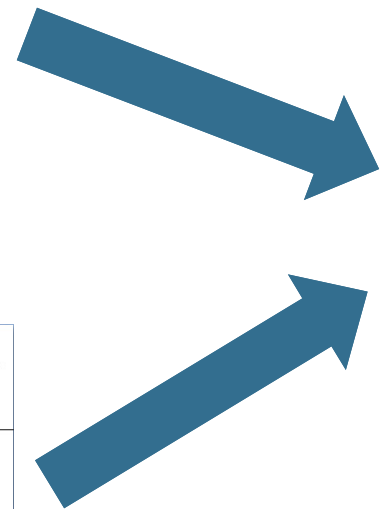
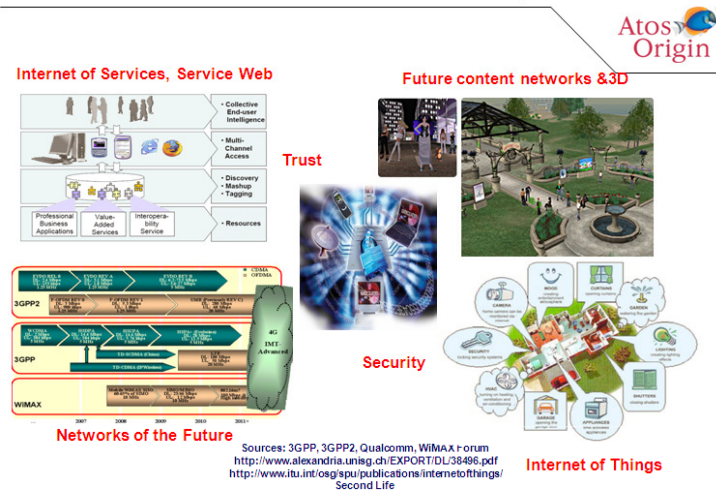
Health → someone working on your prevention, diagnoses, or treatment



Future of Internet and eHealth

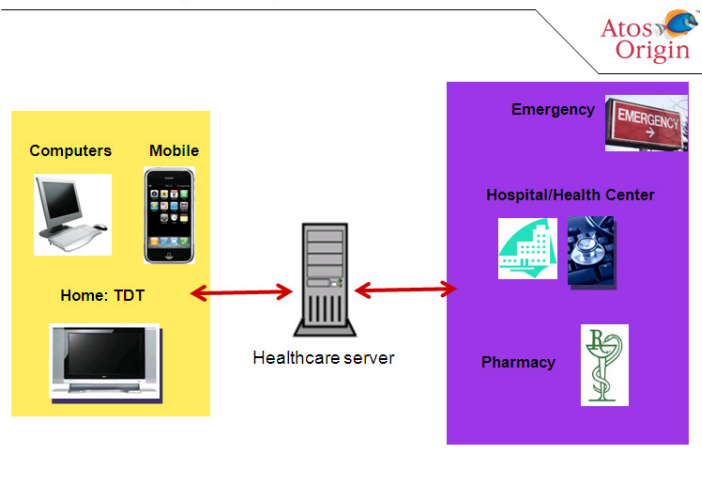


Future Internet's current momentum in Europe



The patient becomes the centre of the healthcare system!

Personal Health Systems: operations & comm links



Technology can provide new solutions for the complex scenarios and problems that Health poses

What lead us to think about this application?



- » Health is a vertical domain with a high impact to society
- » The inclusion of IT in the Health domain is being done at a really slow rate currently.
- » It is a paradigmatic field where the five main pillars of the new technological proposal could be seen easily.
- » It is mature with respect to the inclusion of RTD activities but lacks of more clear actions regarding innovation and application.
- » Field that may require an in deep change of several services and business models and therefore is example of challenging our own current system.

Future of Internet and eHealth (I)



- » Future Network Infrastructure: large scale connectivity, compatibility and ubiquity will guarantee healthcare professionals and patient access to medical information anywhere, enhancing citizen mobility.
- » Internet by and for people: providing a multilingual environmental and more interactive solutions
 - Offering preventive and proactive services
 - Facilitating personalize treatment
 - Giving patients an active part in managing their healthcare
- » Internet of the Things (IoT): under FI umbrella, scenarios where objects exchange information, verify identities, and process information will be possible. This fact will allow, for instance, developing smart environment to provide a better and less invasive monitoring.

- » Internet of Contents and Knowledge: digital medical information is increasing every day. FI can support knowledge management, going further information accumulation by involving intelligent processes (e.g. learning algorithms, semantic web), and underpinning privacy and security in health information systems.
- » Internet of Services: A future service-oriented Internet would allow the access to complex physical compute resources (cloud-computing). Thereby, where data is physically located or services are executed will not be a problem for the end user (healthcare professional or patient).

Key issues to be overcome

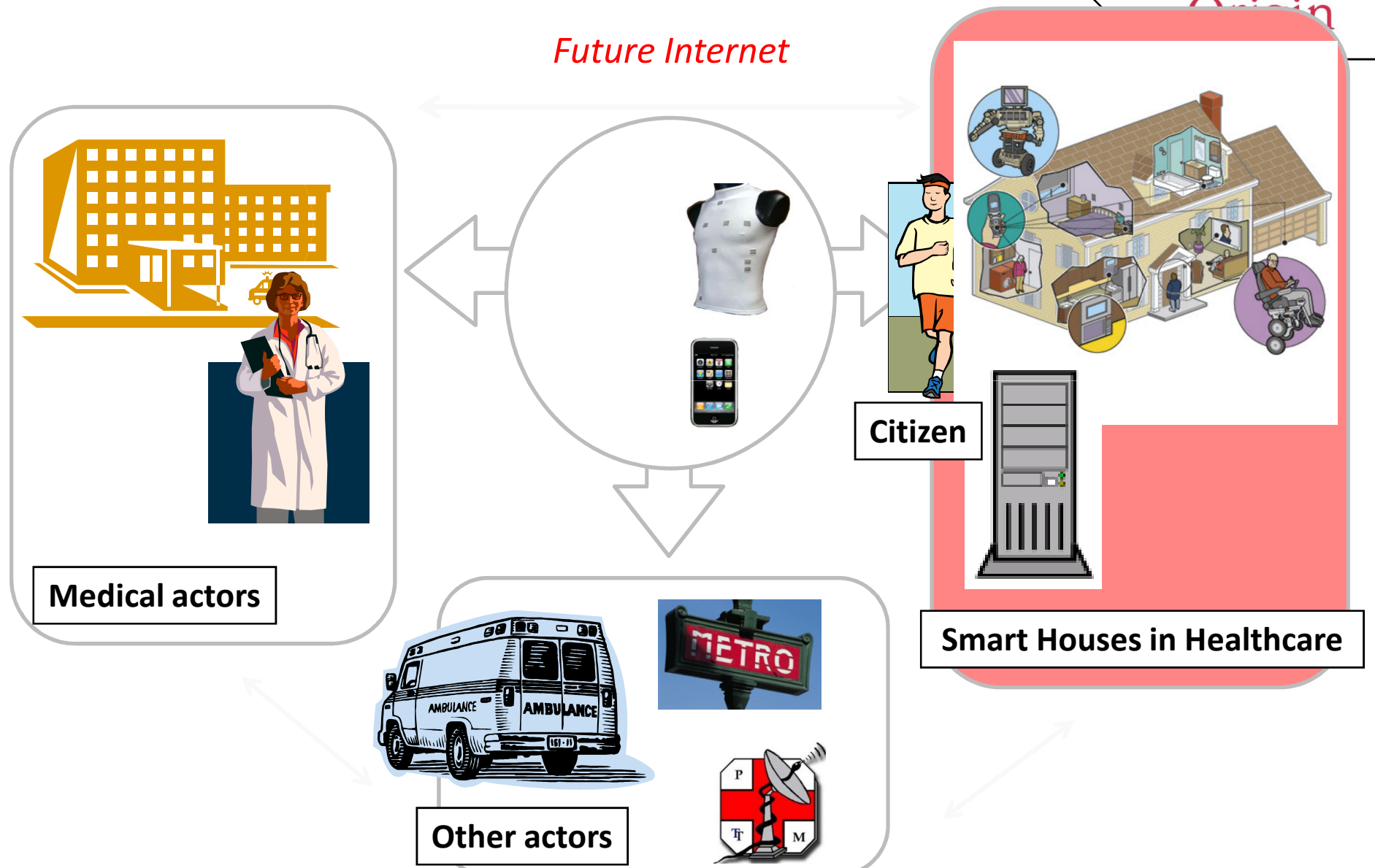


- » Interoperability and standardization of computer-based medical systems.
- » Management and interoperability of Electronic Health Records (EHR)
- » Interconnection of hospitals and medical team remotely
- » Extreme guarantee of privacy and confidentiality of data
- » Enhancement remote monitoring and care of patients (specially for endangered people, for chronic diseases and elderly people)

Future Internet and e-Health

Process	Prevention	Acute care / Treatment intramural / extramural	Rehabilitation
Partner	<ul style="list-style-type: none"> ▪ Citizen ▪ Payer ▪ Regulator 		<ul style="list-style-type: none"> ▪ Patient ▪ Payer ▪ Regulator ▪ Provider
Challenge	<p>Citizen prevention portal</p> <ul style="list-style-type: none"> ▪ Aims at the preventive aspect of health through self-empowerment of citizen and the promotion of healthy behavior 	<p>Unified Biomedical Data System prototype</p> <ul style="list-style-type: none"> ▪ 	<p>Machine to Machine (M2M) communications</p> <ul style="list-style-type: none"> ▪
Scope	<ul style="list-style-type: none"> ▪ Provides secure end-to-end identification and connectivity to store personal wellness and health related data ▪ Creates personalized recommendations based on consumer-grade sensor elevated at home data 	<ul style="list-style-type: none"> ▪ Facilitates the retrieval and integration of information from several sources ▪ Based on a semantic mediation process and cloud-computing to integrate heterogeneous data (e.g. EHR, imaging, omics data, personal wellness and social information) 	<ul style="list-style-type: none"> ▪ Combination of new generation sensors including contactless and nano-scale devices with the Internet of the Things based on wireless communications among these devices

Personal Health Systems: Challenges



Healthcare solutions based on FI: challenges



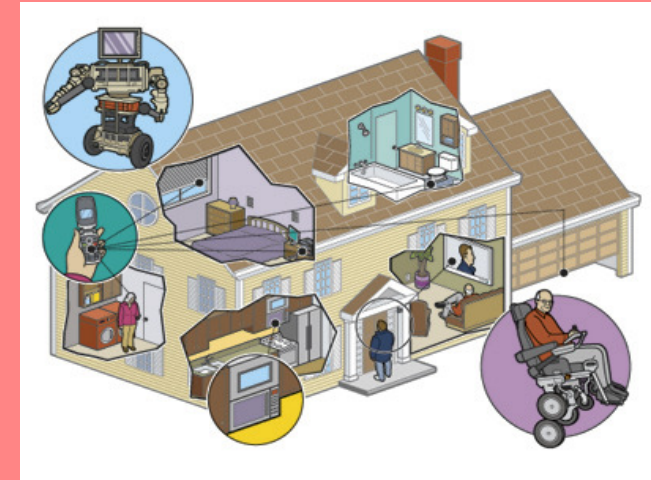
Hospital/Health centres and pharmacies:
interoperability,
information management,
and M2M communications

Future Internet will allow to connect all potential actors/places related to healthcare.



Citizens: wearable and mobile devices to continuous monitoring and communication

Other services: emergency services, public transport...



Smart Houses: M2M communication, non-invasive monitoring, telecare



FI in healthcare will allow an **empowerment of patient**, providing more participative services, **a better prevention, diagnosis and treatment**

Key Issues to overcome

- » **Interoperability and standardization** of computer-based medical systems.
- » Management and interoperability of Electronic Health Records (EHR)
- » **Interconnection** of hospitals and medical team remotely
- » Extreme **guarantee of privacy** and confidentiality of data
- » **Enhanced remote care of patients** (specially for chronic diseases and elderly people)

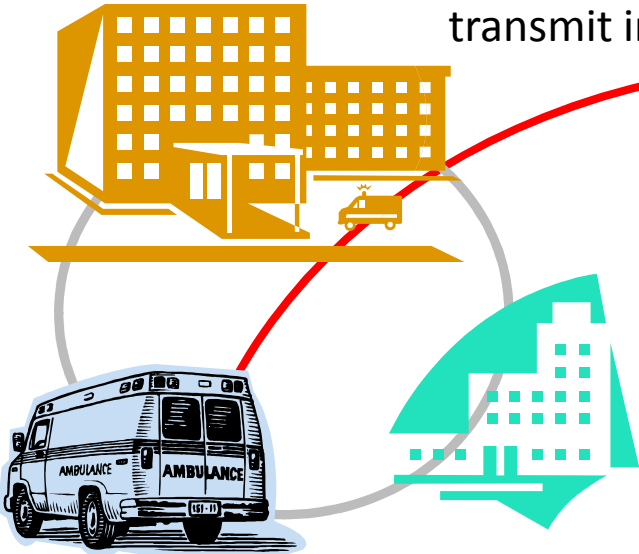
Technical Enablers

- » Interoperability of data- **Data Exchange**
- » Semantic applications and Standards
- » Machine to Machine communications. – **Better monitorization/Homecare**
- » High capacity networks- **improving Telecare and m-Health**
- » Open and interoperable Cloud Services- Grid computing to process great amounts of data- **DSS/VPH**

Enablers needed to implement pilots



Semantic Interoperability and standards to transmit information



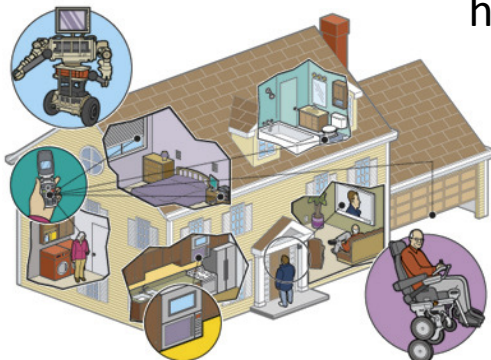
High Capacity & Trustworthy Networks



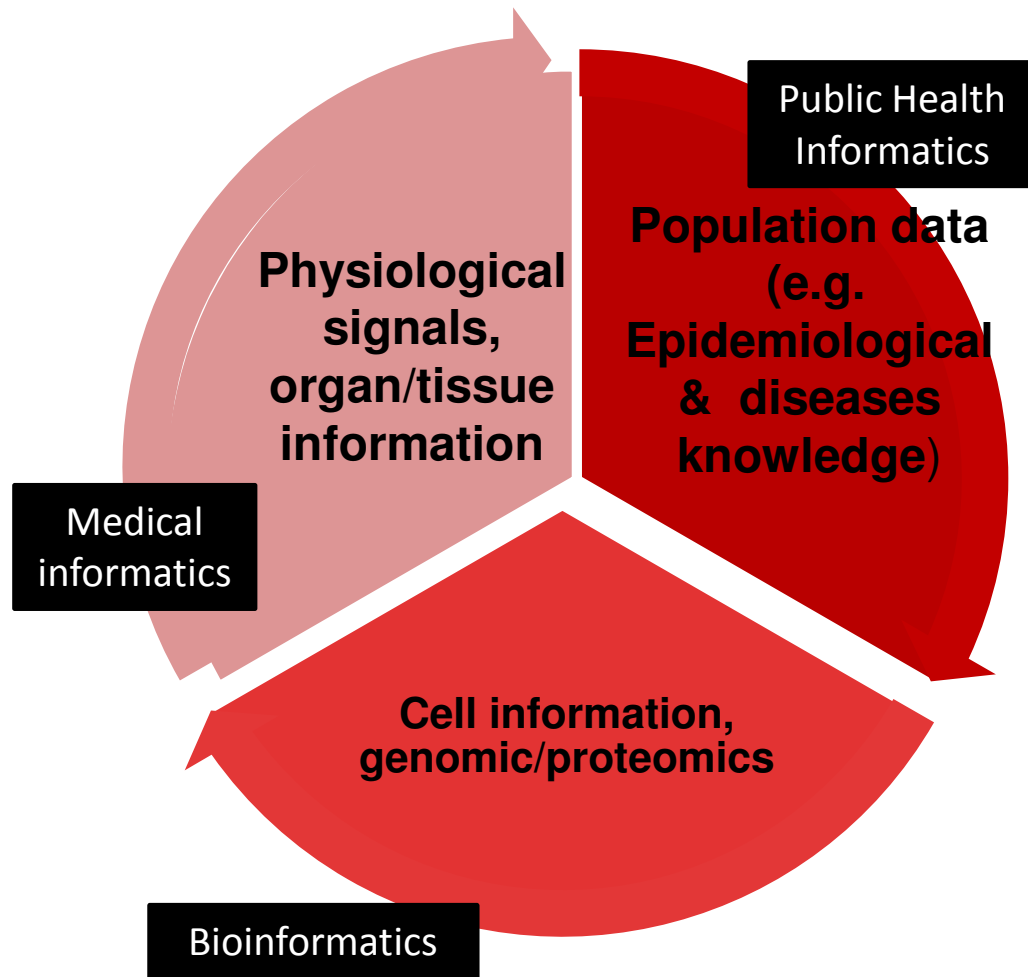
Cloud & Grid Computing to develop Decision Support Systems



IoT: Devices and M2M communications in houses and hospitals



Main tasks previous to the trials

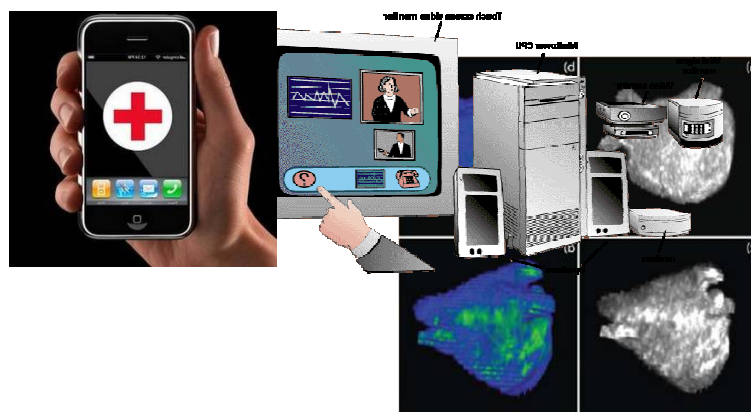


Solving Medical Information exchange making use of semantics & standards. Integration of heterogeneous biomedical data in order to provide personalized treatment



M2M Communications: Implementing sensors networks to provide homecare and ubiquitous healthcare

Main tasks previous to the trials



High Capacity Networks: improve Telemedicine services, Image management, and m-Health



Cloud & Grid Computing: applications focus on DSS and VPH, and access to medical information

Steps towards implementing this?



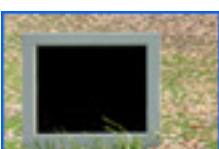
- » First of all we created a working group within the G15 to discuss openly about this issue with the industry group.
- » We produced different papers and internal working documents and is it in its way a final version for a public position paper (to come soon hopefully)
- » We are working on producing a proposal for the first call the Commission is planning to launch.

How may I participate?



- » The working group is under discussion on how to proceed.
- » Different proposals are in the table but all of them want to be able to get on board the most relevant actors and the excellence in Europe.
- » We are thinking about launching a competition schema that positions all of us (including the members of the working group) in the same starting position to be part of our proposal.
- » A public web site will be published if finally this idea goes ahead containing our intentions about how this may work (wide spread of the address will be done through different channels)

Thank you



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