The EIFFEL approach towards Visions for a Future Networked Society

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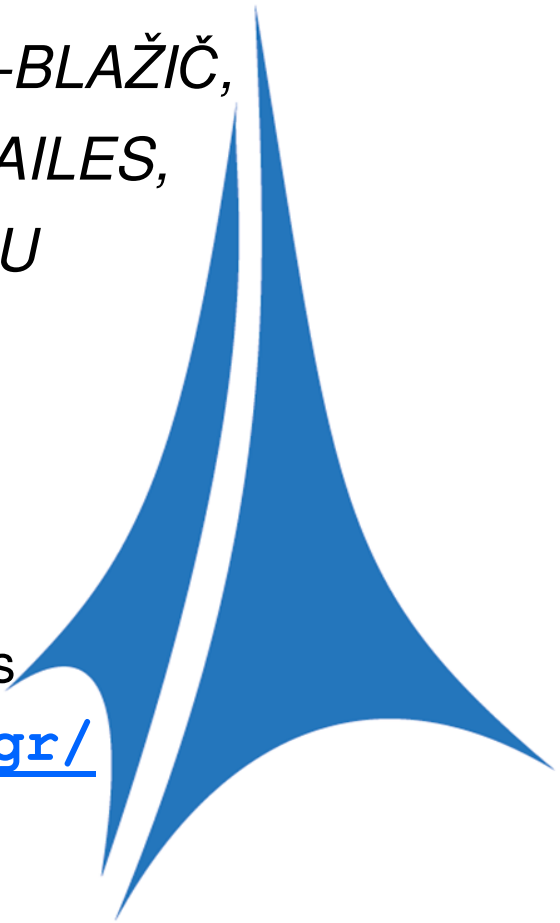

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Overview

- Rationale and Objectives for the SSA
- The Think Tank
  - Lifecycle
  - The Way We Work
  - 1st & 2nd Think Tank Meetings
  - Next Steps

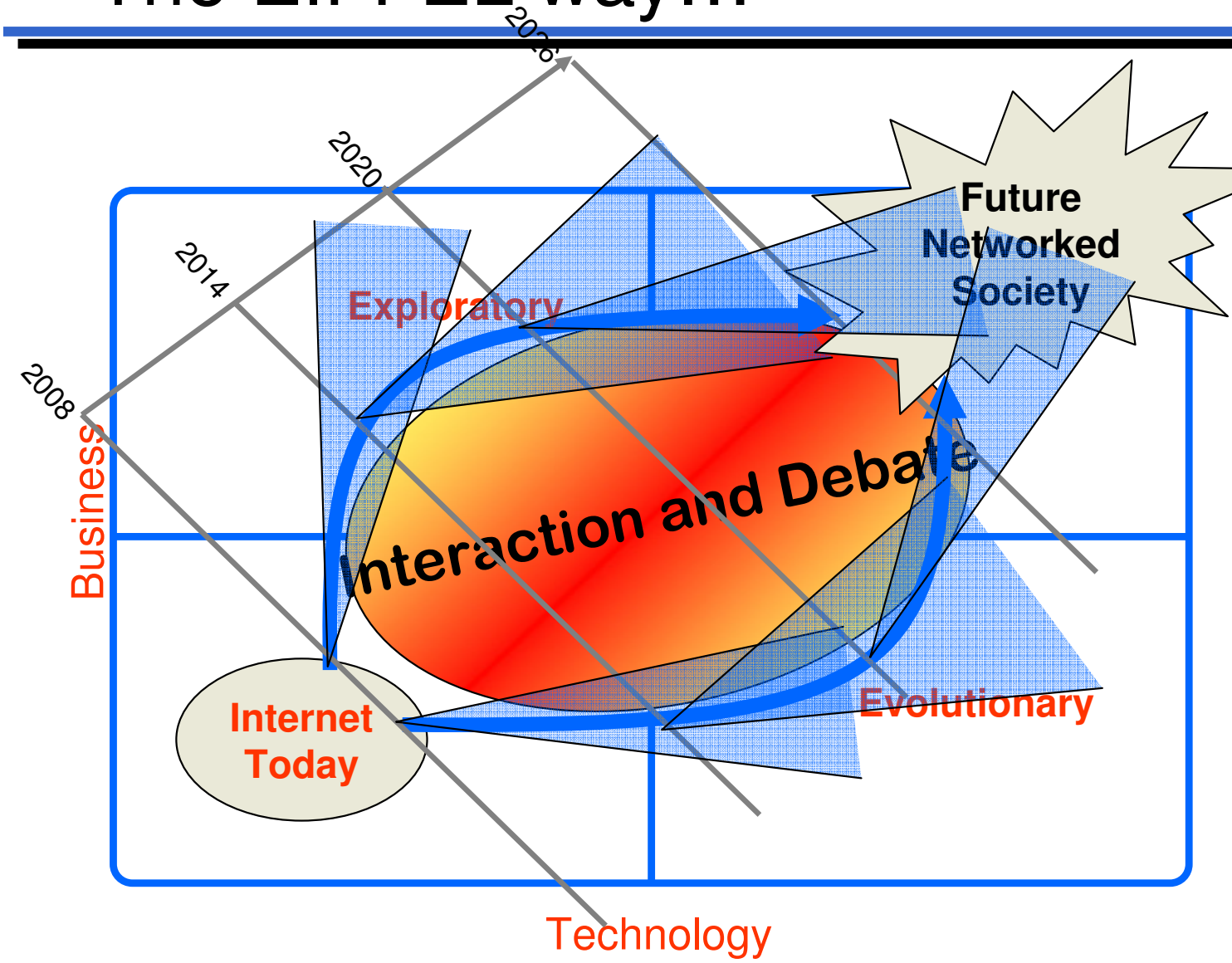
The Ambitions of EIFFEL

- To create **momentum**
- To build **cohesion**
- To **support** various research, governance & policy communities

by

- Providing an international **forum**
- Facilitating the **creation** of relevant projects and initiatives
- Giving Europe **leadership** in the creation of the future Networked Society

The EIFFEL way…



- Recognize importance of evolutionary & explorative path (**balance**)
- Vision trajectories developed for both paths (**research agendas**)
- Development of agendas over time (**phased approach**)

➔ **Interaction & debate needed for agendas and visions meet in common challenge**

Source: EIFFEL

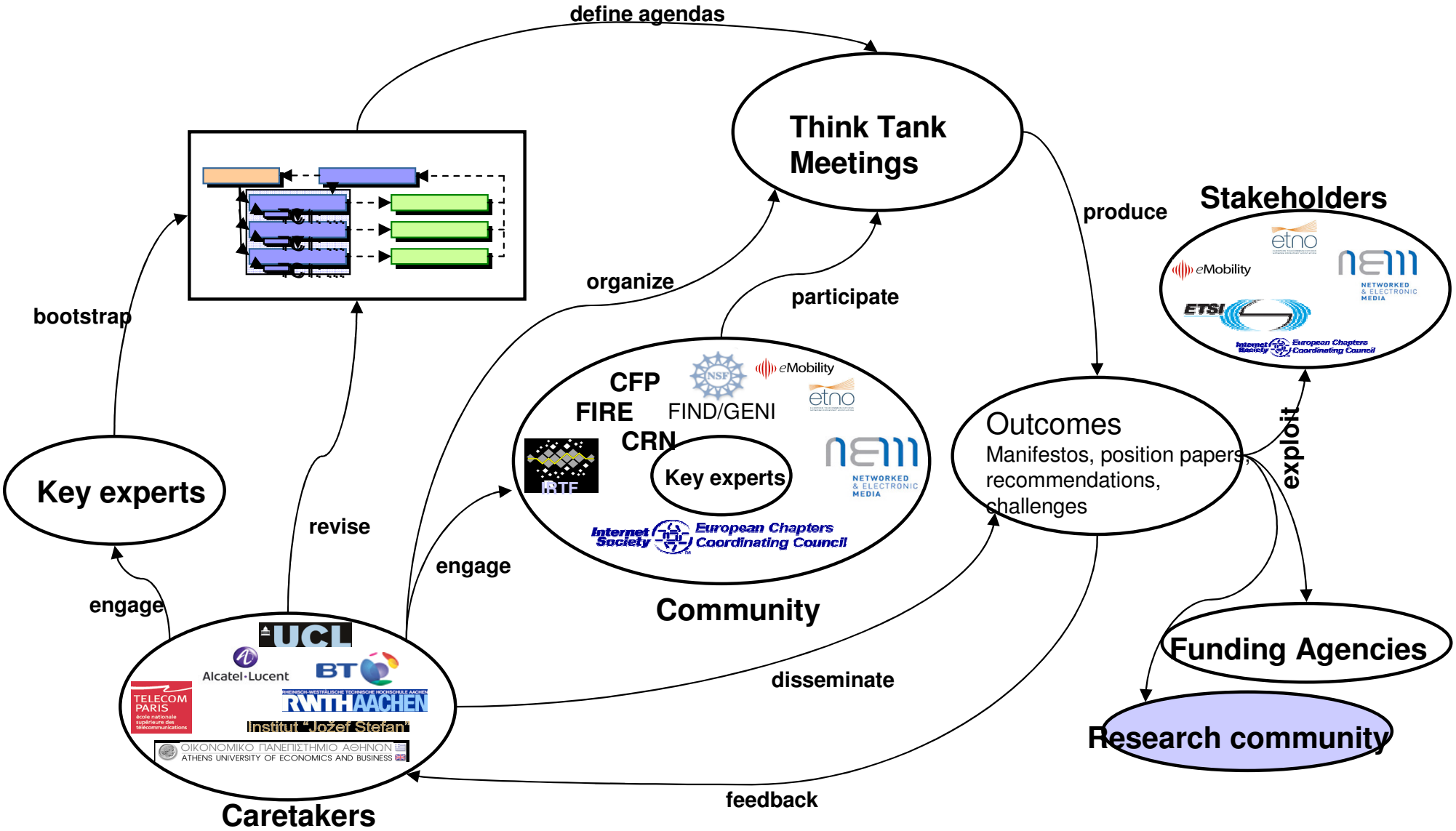
EIFFEL Objectives

- **Creation of a pan-European & International community**
  - of scientific & technical experts
  - in collaboration with other International initiatives
    - research, experimental, etc.
  - to investigate important areas for the Future Networked Society
  - to study the fundamental internet architecture and design principles
  - to produce ... a structured and cohesive vision
    - of the future network society
- **Creation of a Dialogue**
  - to ensure cooperative exchanges between
    - the foundational scientific and exploratory investigation
    - the engineering and evolutionary investigations
  - to derive deployable design principles within the 2020-2025 timeframe
- **Identification of the crucial areas of investigation & research**
  - to transform the Internet towards the Future Networked Society
    - Enforce holistic and multi-disciplinary approaches during the investigation
    - Steer and support research activities (in these domains) by providing appropriate tools, feedback, etc.

EIFFEL Results

- **Create** a Think Tank type of event series to foster dialogue among renowned experts in the FI area
- **Capture** the dialogue of the community in forms of
  - EIFFEL whitepapers
    - Discussion papers
  - EIFFEL manifestos
    - Visions and recommendations
  - EIFFEL forum
    - Online forum for debate in an international community
- **Disseminate** the results towards appropriate forums and initiatives

Lifecycle


define agendas
Think Tank Meetings
produce
Stakeholders
bootstrap
organize
participate
CFP
FIRE
FIND/GENI
CRN
Key experts
Outcomes
Manifestos, position papers, recommendations, challenges
exploit
Key experts
revise
engage
engage
Community
Funding Agencies
disseminate
Research community
feedback
Caretakers

Status within Lifecycle

- Engaged key experts
  - Advisory board
  - TT itself
- Bootstrapped key areas
  - Technology, society, business
- Revised approach
  - Second TT meeting
- Started engaging with outside community
  - First liaison activities
- Produced outcomes
  - EIFFEL whitepaper draft
  - Online forum

Think Tank Meetings

- Continues notion of **Think Tank** (TT) from previous EIFFEL efforts
- Invite key experts in areas of debate
- Merit-driven, i.e., peer recognition of expertise is basis for invitation
- Think Tank itself drives its form and direction (see later)
- Six TT meetings planned
  - Venues rotate among partner sites

Tools for Facilitation

- Internal (partner) wiki for organization and running the SSA
- TT member wiki for meeting information, discussions, archiving
  - Needs registration
- Mailing lists
  - Internal for partners
  - For TT members (general & topic-wise)
- Whitepapers/reports
  - Usually facilitated by an EIFFEL partner
  - Contributions from EIFFEL TT members (in their free time!)

Liaison Activities
Purpose and Context

- Liaison in the context of EIFFEL is conducted in the spirit of the overall SSA
  - it is more concerned with community creation than formal liaisons that would, e.g., involve liaison officers and formal relationships
- Hence, liaisons serve the purpose to
  - extend the EIFFEL community
  - disseminate results into forums, initiatives and towards thought leaders
  - gain insight into current discussions in order to feed them into overall EIFFEL discussions
  - ascertain what types of research receives funding and what not
  - establish the ways in which research gets inducted; how test facilities are funded and managed
- Liaisons are established through TT members and caretakers

Liaison Activities

Examples

- **FP7 FIRE**
- **FIA**
- NoEs (e.g., Euro-NF)
- ETPs
- National initiatives, e.g,
  - GLAB
  - SHOK
- International activities
  - **FIND**
  - **GENI**
  - **Japan**
  - AsiaFI
  - KOREN
- Organizations
  - **ISOC/ISOC-ECC**
  - **IETF/IRTF**
  - **IAB**
  - ETNO

Research Style and Methodologies

- Introduction saw surprise discussion on research style, question on science vs. engineering, methodologies, …
  - Continuous thread throughout the meeting
- Scientific approach requires
  - clear formulation of research question
  - ability to (repeatedly) test for verification
  - ability to measure phenomenon of interest
- Several issues were integrated into 2nd TT meeting
  - Data measurements
  - Facilitating scientific debate

1st TT Meeting
Teaser Presentations

- "Overlay-based network architecture", J. Lieberher
- "Defend the regular humans!", F. Stajano
- "Staying focused on the big unsolved problems", B. Briscoe
- "Emerging Wireless Technologies and their Impact on Future Internet Architecture", D. Raychaudhuri
- "From Design to Runtime: Tussle Networking Challenge", D. Trossen
- "Network Management: an Architectural Challenge", K. Sollins
- "Looking Back, Looking Forward: A few observations about the Internet (r)evolution", L. Zhang

1st TT Meeting
Summary of Results

- Creation of initial community
  - Seeding the bootstrap process
  - International participation, crucial to capture the wider community
  - Relatively high acceptance, given the novel character of EIFFEL
- Creation of first areas of work
  - Not fully established **Technical Areas** but areas of investigation
- Creation of a first EIFFEL whitepaper
  - More later…

Starting the Debate

- Whitepaper started off where 1st TT meeting ended
  - Engaged author team outside EIFFEL core partners (Lixia Zhang, Karen Sollins, Bob Briscoe)
- Addressed questions like
  - Why is FI research needed?
  - How shall it be performed?
  - What are the key issues in the areas of technology, society and business
- Paved the way for 2nd TT meeting discussions
  - Released beforehand to wider TT members
- Final version to be released for 3rd TT meeting

2nd Think Tank (London, 17-18 /2/2009) Participants

- Rui L.A. Aguiar (Universidade de Aveiro)
- Bernard Barani (EC)
- Bob Briscoe (BT)
- Ian Brown (Oxford Internet Institute)
- kc claffy (UCSD/CAIDA)
- David Clark (MIT)
- Bernhard Collini-Nocker (U. Salzburg)
- Costas Courcoubetis (AUEB)
- Jon Crowcroft (Cambridge University)
- Piet Demeester (Ghent University)
- Vijay Gill (Google)
- Andrei Gurtov, (University of Helsinki)
- Peter Key (Microsoft Research Cambridge)
- Scott Kirkpatrick (HUJI)
- Peter Kirstein (UCL)
- Jörg Liebeherr (University of Toronto)
- Paulo Mendes (INESC Porto)
- Akihiro Nakao (NICT Japan)
- Jörg Ott (Helsinki University of Technology)
- Dipankar Raychaudhuri (Rutgers University)
- Jim Roberts (France Telecom)
- Pablo Rodriguez (Telefonica R&D)
- Karen Sollins (MIT)
- Frank Stajano (Cambridge University)
- Lixia Zhang (UCLA)

EIFFEL caretakers

- Emmanuel Dotaro, Alcatel Bell
- Stephen Hailes, UCL
- Rae Harbird, UCL
- David Kennedy, Eurescom
- Tomaz Klancnik, Jozef Stefan Institute
- Petri Mähönen, RWTH
- Dimitri Papadimitriou, Alcatel Bell
- George C. Polyzos, AUEB
- Janne Riihijärvi, RWTH
- Dirk Trossen, BT Research
- George Xylomenos, AUEB

2nd EIFFEL TT Meeting
Teaser Presentations

- Vijay Gill (Google)
  - Examined practicalities in supporting large scale computing systems over the public Internet
- Dave Clark (MIT)
  - There are desirable design patterns for applications that can be supported by the provision of tools other than simple byte streams at the network layer
    - These patterns relate to the location of functionality and the trust relations of the components
  - Trust is seen a key concept in application design
- Ian Brown (Oxford Internet Institute)
  - Is it necessary to design constraints on the power of governments into the architecture of the Future Internet?
- kc claffy (CAIDA)
  - Our ability to measure is surprisingly poor and cooperative data sharing approaches to measurement and analysis is key to enlightened policy
  - We need to incorporate abilities for measurements in any future architecture

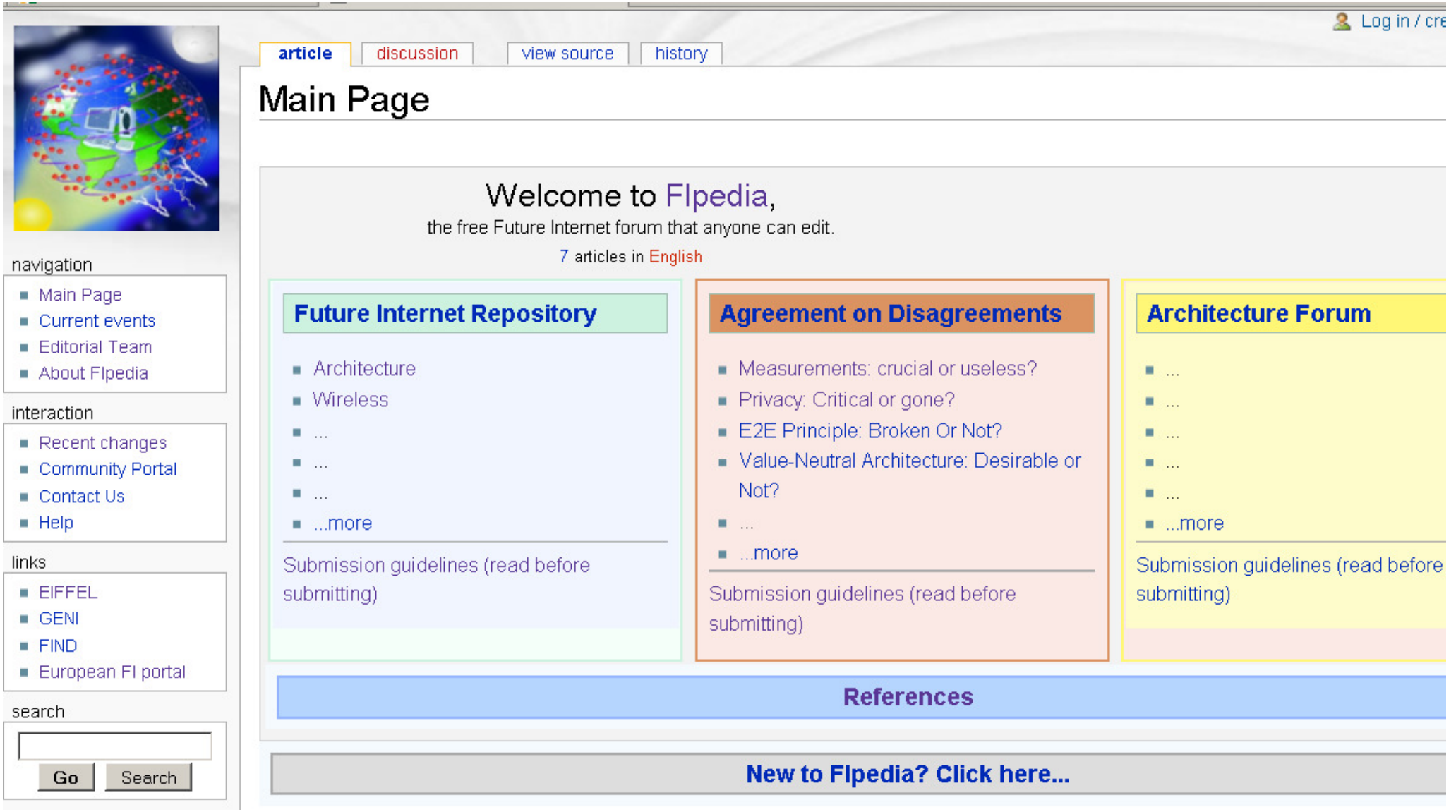
Agreeing on Disagreements

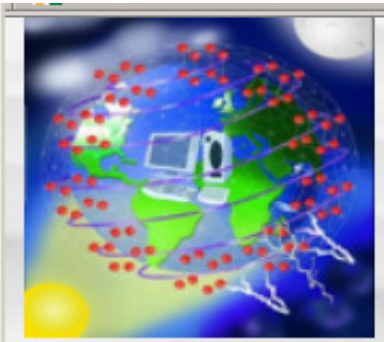
- Recognized that agreeing on disagreements is often hard
  - But it is required to push forward the debate
- Compiled a list of disagreements, e.g.,
  - The end-to-end design principle
    - precisely what additional caveats does it need?
    - is it broken?
  - Evolution vs. Revolution
  - Should one design for tussle, or instead take a position of gratuitous indecision?
  - Should there be a single architecture, or a number of interconnected architectures?
  - Should protocol adoption take place by incentive, or be dictated?

2nd EIFFEL TT Meeting
Summary of Results

- Reinforcement of international community
  - Very good return rate of participants
  - Very good feedback, gathered online
    - >90% found meeting useful
    - >90% would attend again
    - >90% rated presentations as very good
- Identification of work items
  - Notion of disagreements drives this work
- Established efforts for an online venue
  - More later…

FIpedia.org: A Future Internet Portal





project page | discussion | view source | history

navigation

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- Current events
- Editorial Team
- About FIpedia

interaction

- Recent changes
- Community Portal
- Contact Us
- Help

links

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- GENI
- FIND
- European FI portal

search

Go | Search

toolbox

- What links here
- Related changes

FIpedia:About

History

FIpedia was created as an outcome of the EIFFEL think tank meeting in London in February 2009. The EIFFEL think tank is chartered with debating issues towards the Future Internet in general (see more by following the link above).

The EIFFEL community felt that there is a need for the following items:

- a collection of relevant state-of-the-art in the space of the Future Internet, eventually building up a **repository**
- a stage for debating and agreeing upon **disagreements** in the space of the Future Internet, i.e., what are the pressing issues the community cannot (but should) agree on?
- a forum for **architectural debate and contributions**, based on an observation that 'architecture discussions' are hard to conduct through mainstream conference and journal publications.

Objectives for FIpedia.org

FIpedia is an attempt to address the abovementioned items by creating this site as a dedicated space to address this recognized need. Its content is contributed by a community of volunteers, edited by an editorial team to consolidate the content regularly. FIpedia furthermore provides a repository of research considered relevant for the Future Internet. Also this repository is contributed by volunteers. Editing this area is limited to structuring the contributions into meaningful areas.

Disclaimer

The site hosting is supported by the EU FP7 strategic support action EIFFEL .

FIpedia.org

- Focus on
  - Agreeing on disagreements
    - Inviting opposing viewpoints, allow for commenting by others
  - Establishing repository of relevant FI work
    - A growing collection of state-of-the-art
- Editorial team for clear governance
  - Dave Clark, Lixia Zhang, Rui Aguiar, Bob Briscoe, Dirk Trossen
  - Move articles, categorize work, …
- Set up governance for site (disclaimers, privacy policies)
  - Authors retain copyright
  - Contributors require confirmed login
  - Contributions can be viewed anonymously

3rd EIFFEL TT Meeting

- Place: Athens
- Date: Oct. 6-7, 2009
- Organized by AUEB
- Aim at ~30 participants

- Content derived from
  - FIpedia debates
  - Whitepaper(s)