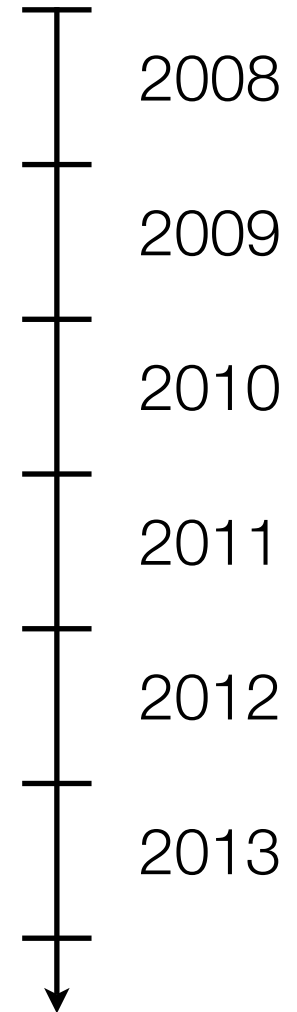

The future of the currently funded EU activities

E.Elsen
DESY

Period 2007-2013

- Post-RDR
 - reference design will have been established
- TDR-contributions
 - optimisation of designs
 - site specific activities
 - in Europe
 - outside of Europe
 - site specific layout
- Prototyping and pre-construction work



Ongoing EC funded Activities

- CARE (Integrated Infrastructure Initiative) (2004-2007/8)
 - SRF (Joint Research Activity)
 - ELAN (Network)
- EUROTev (Design Study) (2005-2007)
 - 7 Work Packages
- EUDET (Integrated Infrastructure Initiative) (2006-2009)
 - Test beam infrastructure
 - Tracking
 - Calorimeters
 - Network
 - Transnational access

} Will assume that detector research has been taken care of. No need for immediate action – wait till 2008.

Other Activities (not necessarily EC funded)

- Beam Delivery
 - Crab Cavity
 - IR layout (crossing angle specific)
- FLASH (alias TTF / VUV-FEL)
 - Beam / instrumentation experiments
- PETRA III
 - Laserwire experiments (partially EC funded)
 - Emittance/wiggler studies
- ATF
 - Final focus

Positron Source

- Undulator development (CCLRC, Cornell, DESY, Liverpool, LLNL, SLAC)
 - Design and further prototyping of 150 m undulator.
 - Target construction
 - Spin transport depending on final IR layout
- Layout / cost optimisation

Damping Rings

- Verification of design
 - vacuum chamber design verification
 - damping ring layout using existing facilities (site specific)
- Commissioning
 - proven strategies

	ATF2	PEP II	CESR	LHC	HERA
e-cloud					
fast ion					
emittance					
kicker					
instrumentation					

Diagnostics

- Feedback systems
- Laserwire
- BPM readout / verification
- IR specific diagnostics
 - fast luminosity determination, energy spectrometer and polarimetry (LEP)

Simulations

- continuation of ongoing activities as specifications change
 - BBSIM
- failure modes assessment

- (Some EUROTeV participants wish to continue specific research beyond ILC)
 - drive beam for CLIC

Stabilisation

- site measurements complete (or easily done)
- development of specific hardware
 - quads in cold mass
 - final doublet
 - ...

Remote Control / Control Systems

- GAN / MVL will have considerable achievements
- New control systems planned for LHC, XFEL, ...
 - joint proposal?
- Exploring/advancing ATCA based systems
 - initiatives in the US

Specific SC RF related studies

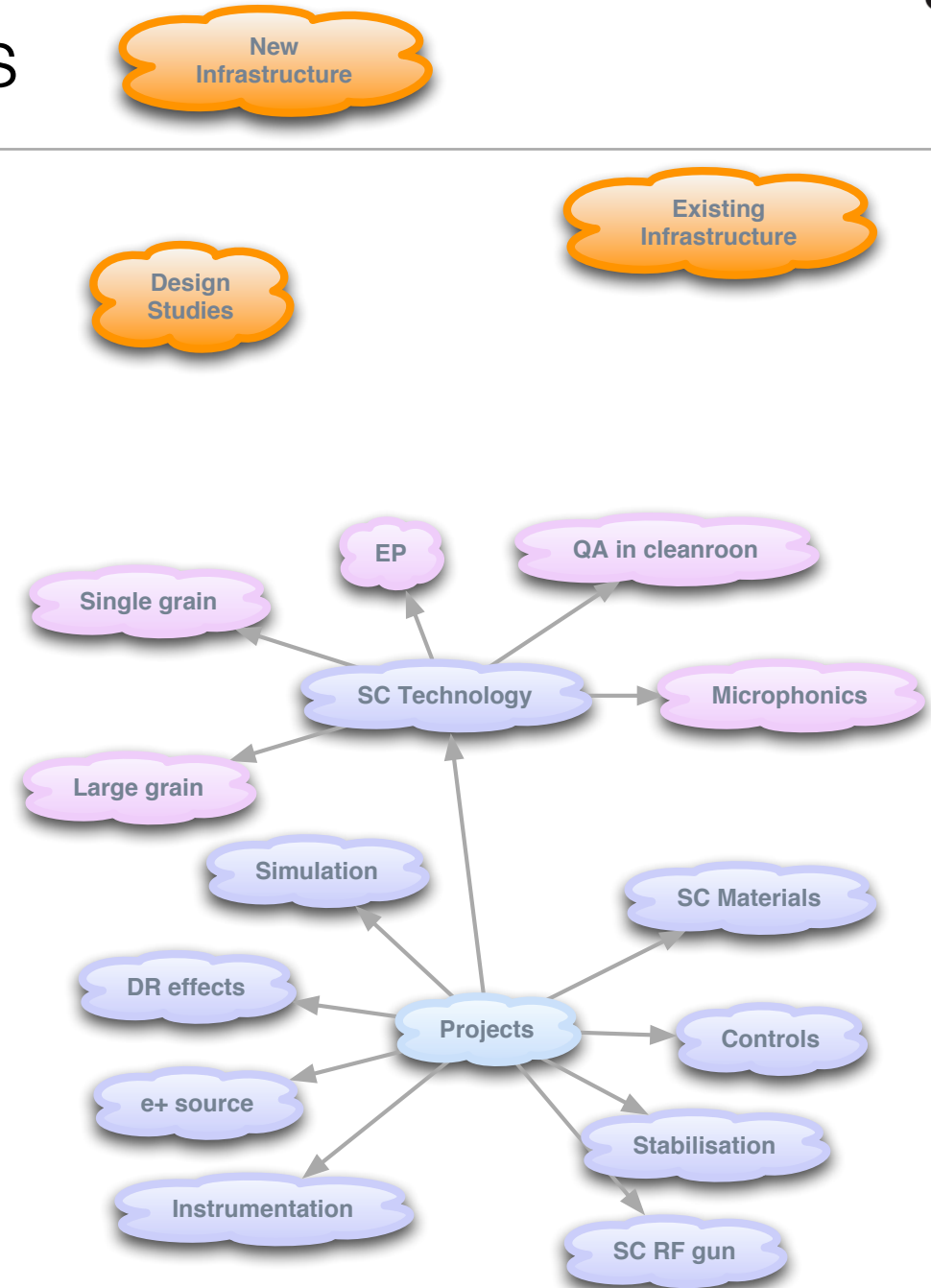
- Technology
 - large grain Nb cavities
 - single crystal Nb cavities
 - ion beam cleaning of bulk multi-cell cavities
 - extending EP investigations to vertical arrangement and detailed Q-disease analysis
 - development of fast surface analysis (QA for field emission) under clean-room conditions
 - electro-acoustic behaviour of SC cavities (analysis of de-tuning and microphonics especially at very high gradients)

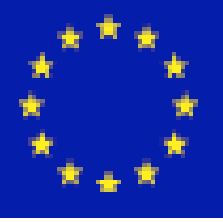
Specific SC RF related studies

- Instrumentation
 - cold instrumentation for beam resolution better 1 μm
- New application
 - new RF guns (high brightness, ps-pulses) with SC RF photo cathodes
- Fundamental research
 - investigation of A15 materials for SC RF cavities (e.g. V_3Sn , Mo-Re, Nb_3Al)
 - RF investigation of high T_c materials
 - infrastructure for characterisation of materials (Kapitza resistance, thermal conductivity,...)

Partitioning the Programs

- relevant to
 - timing
 - partners
 - facilities
 - interregional context
 - R&D in US and Japan



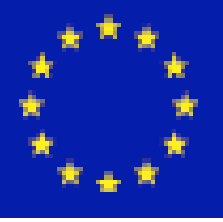


Activities in FP7

- For new research infrastructures (incl. major upgrades)
 - Design Studies
 - Construction of New Infrastructures

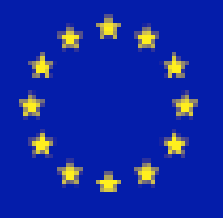
} probably first
- For existing research infrastructures
 - Transnational Access
 - Integrating Activities
 - ICT based e-infrastructures

} 2nd round



Existing Research infrastructures

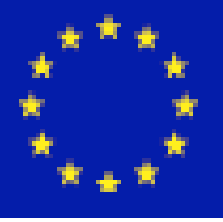
- Objective: To optimise their use, development and integration
 - Transnational Access: to support new opportunities for research teams to obtain access to the best research infrastructures
 - Integrating Activities: to integrate European infrastructures and promote their coherent use and development (networking + transnational access + joint research activities)
 - ICT based e-infrastructure: to foster development of high-capacity and high-performance communication (GÉANT) and grid infrastructures
- Implementation : bottom-up calls for proposals open to all fields of
- science + targeted calls in close co-operation thematic areas in FP7



New research infrastructures in FP7

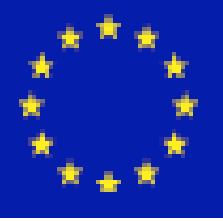
- Objective: To help create new research infrastructures of pan-European interest (or major upgrades of existing ones)
 - Design studies: to support feasibility studies for new infrastructures through approach of calls for proposals
 - Construction of new infrastructures (incl. major upgrades): to promote the creation of new infrastructures through a strategic approach based on the work conducted by ESFRI* on the development of a European roadmap for new research infrastructures

* ESFRI – European Strategy Forum for Research Infrastructures

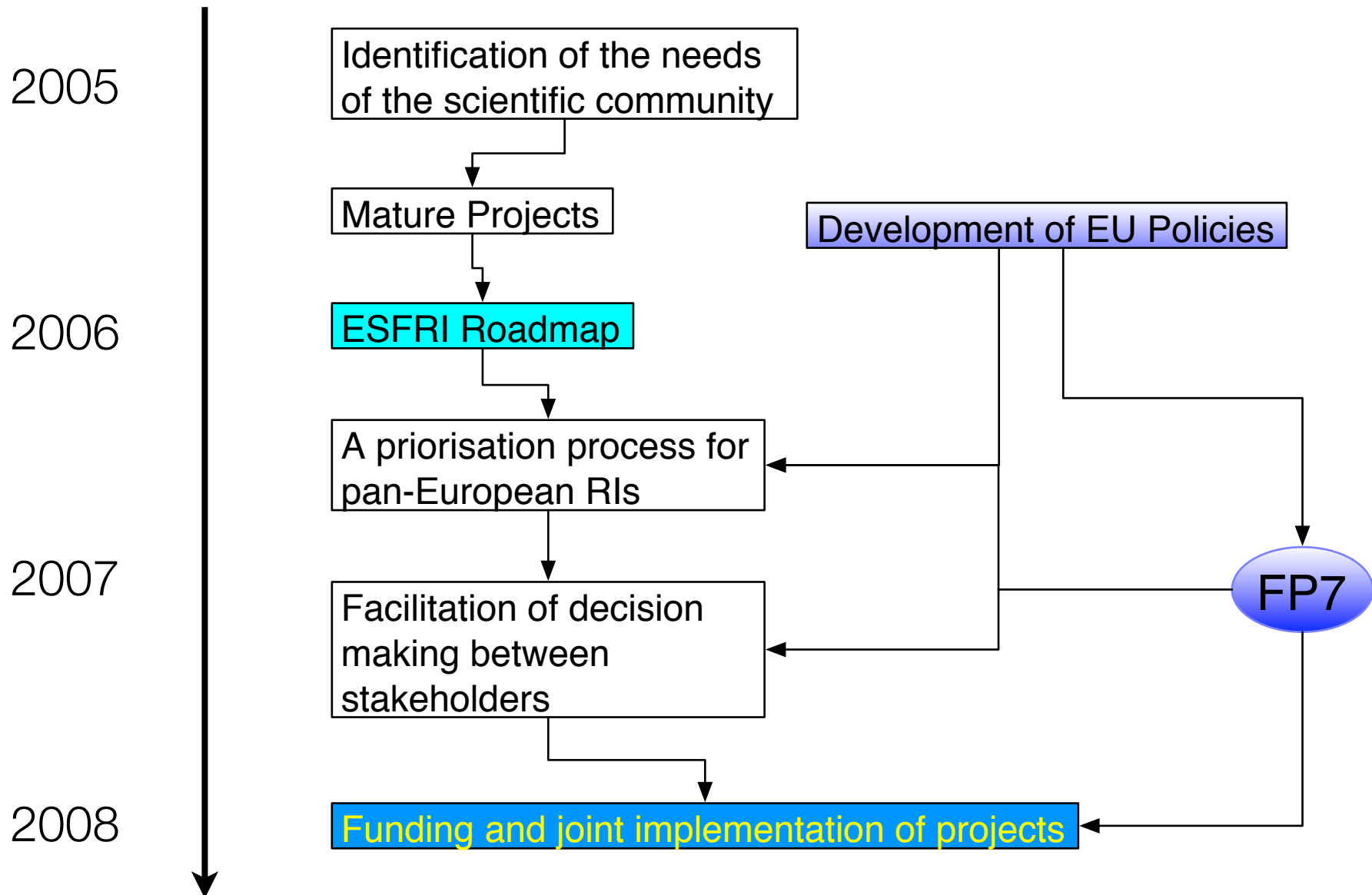


New research infrastructures in FP7

- Construction via a two-stage process:
 - The preparatory phase
 - restricted calls targeting priority projects (based on the work of ESFRI) to support finalisation of construction plans, legal organisation, financial engineering, management aspects
 - The construction phase
 - developed following the satisfactory implementation of the preparatory phase
 - “case by case” approach (e.g. use of Article 171)



The ESFRI Roadmap and FP7



Conclusions

- SC RF infrastructure
 - assume recommendation of ESFRI
 - possibly preceded by a Design Study
 - could accommodate other topics
- Other research related
 - I3, i.e. peer review