



DE LA RECHERCHE À L'INDUSTRIE

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French Alternative
Energies and Atomic
Energy Commission



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***The Institute of Research into the
Fundamental laws of the Universe
(IRFU)***

Directorate meeting on May 20

Head of Institute
Anne-Isabelle Etievre
 Assistant: Josiane Parnas
 Deputies: Nicolas Alamanos
 Marie-Cécile Aubert

Larsim
 Research on sciences matter lab
Etienne Klein

Assistants

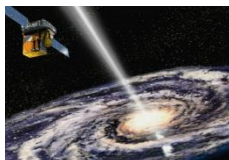
QSE*
 Project
 Communication
 Budget
 Europe Programs
 Industrial Partnerships
 Human Ressources

Erick Blanchard
Emmanuelle Bougamont
Sophie Kerhoas-Cavata
Nathalie Judas
Sylvie Leray
Christine Porcheray
Christine Tiquet

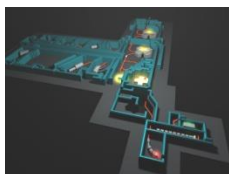
Delegates

Computing & Simulation
 Evaluation
 Safety
 Computing ressources
 PhD Students

Allan-Sacha Brun
Pascal Debu
Erick Blanchard
Shebli Anvar
Jérôme Rodriguez



SAP
 Astrophysics and
 Space Technologies
Anne Decourchelle
 Dep. Head: Pascale Delbourgo



SPhN
 Nuclear Physics
Héloïse Goutte
 Dep.Head: Jacques Ball

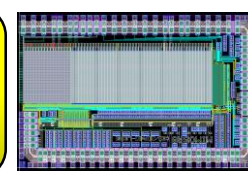


SPP
 Particle Physics
Gautier Hamel De Monchenault
 Dep. Head: Georges Vasseur

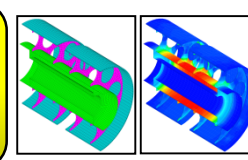
SACM
 Accelerators, Cryogenics
 and Magnetism
Pierre Védrine
 Dep. Head: Ph. Brédy / O. Napoly



Sedi
 Detectors, Electronics
 and Computing
Eric Delagnes
 Dep. Head: Philippe Bourgeois



SIS
 Mechanical Design
 and System Engineering
Christian Veyssièrre
 Dep. Head: Frédéric Molinié





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- *The Institute inside the CEA*
- *How the strategy is elaborated*
- *The Scientific Roadmap - including Accelerators, magnets and instrumentation roadmaps*
- *The French financial system*
- *Decree (No 2016-311 of 17 March 2016 on the organization and functioning of the CEA*

Irfu strategy is elaborated in

■ Division level :

- Strategy reviewed by division scientific council (CSTS)
- Topical meetings and discussions between physics and technological divisions

■ Institute level:

- Annual seminar management: review of Irfu strategy in terms of scientific and technical orientations, but also in terms of personal/investment and resources.
- “Contrat d’objectifs”: institute strategy & resources reviewed by DRF management
- International Scientific Council recommendations

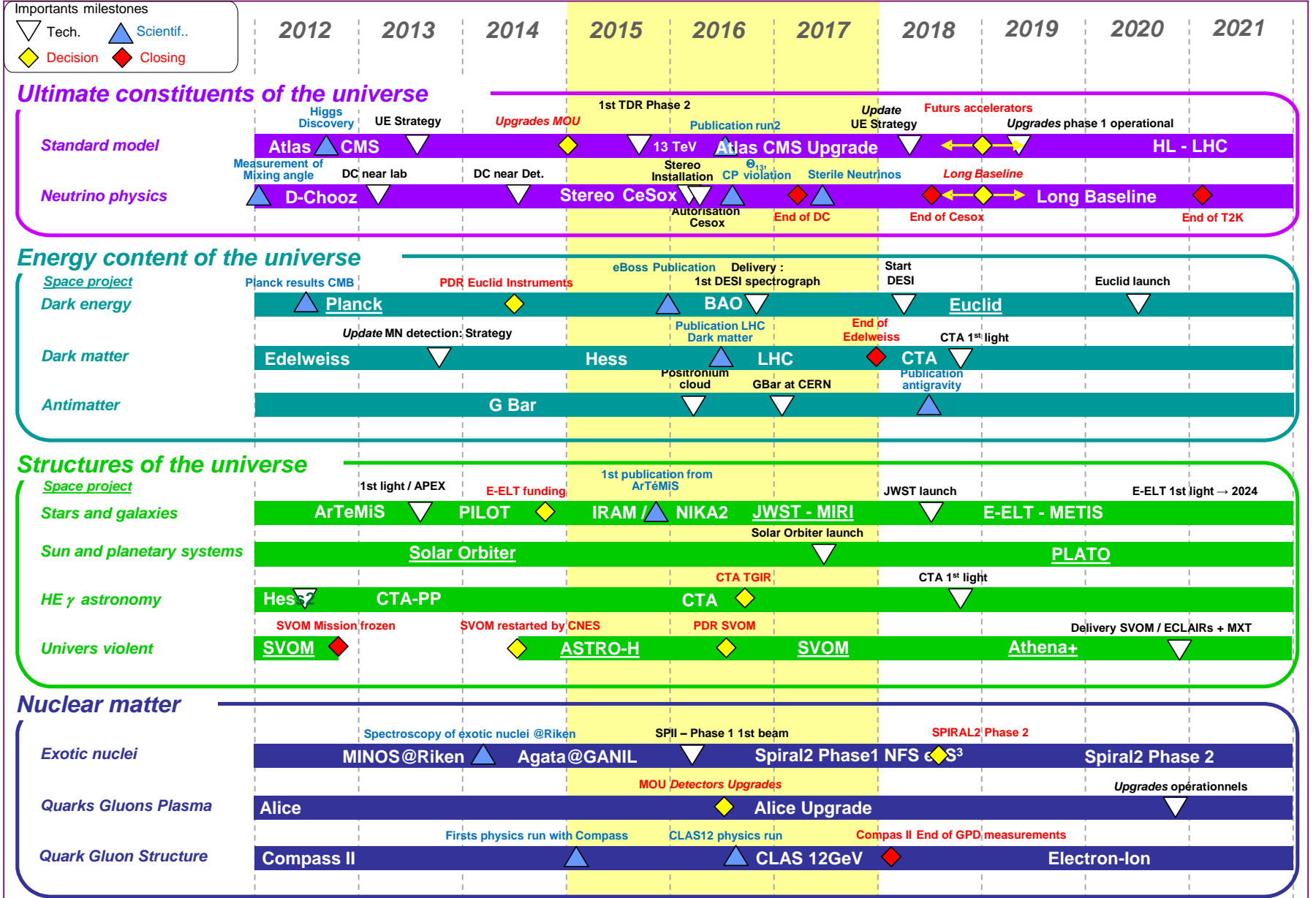
■ Irfu members are actors: of national and international panel reviews

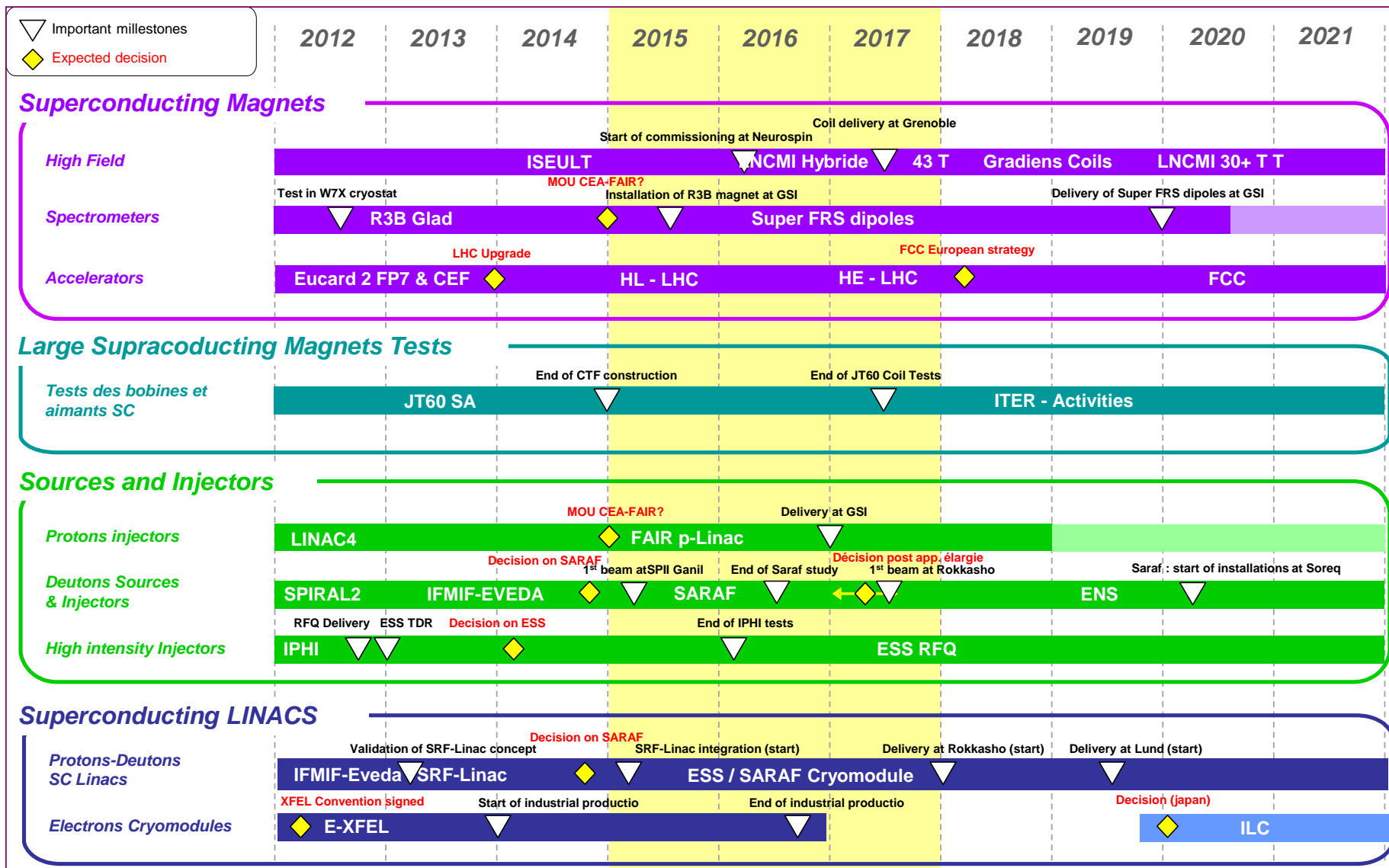
- CNES, GANIL, ESA, CERN (European strategy), NUPPEC, APPEC,...

The Committee Members are:

- **Norbert Holtkamp:** SLAC, Director of the Accelerator Directorate, former principal deputy director general of ITER.
- **Xavier Barcons:** ESO, President of the European Southern Observatory council, former president of the SSAC of ESA, Prof. at the Spanish Council for Scientific Research.
- **Peter Jenni :** Albert-Ludwigs-University Freiburg and CERN, Former ATLAS Spokesperson
- **Angela Bracco:** INFN, Chair of NuPECC, Chair of the Nuclear Physics Board of INFN, Professor of Physics at the University of Milano.
- **Ariella Cattai :** CERN, Senior Physicist, ATLAS experiment
- **Nathalie Roe :** BERKELEY, Director of the Berkeley Physics Division.
- **Niel Gehrels :** NASA, Chief, Astroparticle Physics Laboratory, NASA/GSFC, College Park Professor of Astronomy, U. Maryland and Adjunct Professor of Astronomy & Astrophysics, Penn State University.
- **Hideto En'yo :** RIKEN, Director of the RIKEN Nishina Center for Accelerator-Based Science.
- **Graham Smith :** BROOKHAVEN, Head of the Instrumentation Division at Brookhaven Lab.
- **Leonid Rivkin :** PSI, Member of the « board of Directors » of Paul Scherrer Institute, Head of the PSI department of large research facilities, Professor of accelerator physics at EPFL

- Following my notes
- The panel took note with satisfaction of the great progress of the LHC Phase-1 and Phase-2 upgrade activities for ATLAS and CMS. The immediate task for a timely construction of the ATLAS New Small Wheel micromegas chambers is particularly challenging in all aspects. The panel was impressed with the final R&D and the large clean room preparations.
- The SPP (with SPhN) is significantly involved in a broad range of neutrino physics activities, with important results and exciting prospects. SPP has broad technical expertise that should position it well to contribute to future long baseline neutrino experiment....





▽ Importants milestones

◆ Decision

Space projets

Detection of radiations

Development of detectors and instrumentation

Gaseous detectors / MPGD

MINOS

2015 TomoMu CLAS12 ▽ NSW(ATLAS) WA105(+Long BaseLine) → FCC-ILC-EIC →

Solid detectors

Agata 1/3 EDWIII

2015 MFT(Alice) Sirius (S3) DESI ▽ ATLAS-2-Pixel →

Camera/Spectro-imager

ArTéMiS

2015 STIX(SolarOrb) MXT(SVOM) NIST (EUCLID) CTA → ▽

ASICs – Frontend elect.

Nectar(CTA) AGET DREAM(CLAS12)

2015 CryoElectronic → CMS-2-Ecal →

Num.System/real time

ECLAIRS (SVOM)

2015 SVOM restarted LTDE (ATLAS) ◆ GBTX(ALICE) UGTS(SVOM) ATLAS&CMS-2 →

Cryomecanism

MIRI

2015 EUCLID ▽ Spatialization ELT METIS

PSU – onboard power

Instrumentation for beams and magnets

Targets (cryo,...)

MINOS

2015 Minos at Riken ▽ 2016 ChYMENE ▽ 2017 Targets R3B ▽ 2018 1st exploitation at CERN/Ganil 2019 1st tests in Russia 2020 Hypernoyaux à FAIR →

Diagnostics

IFMIF

2015 IFMIF ▽ Commissioning IFMIF 2016 IPM(ESS) 2017 BLM(SARAF) 2018 BLM(ESS) ▽ 2019 ESS Delivery 2020 ESS at LUND

MSS

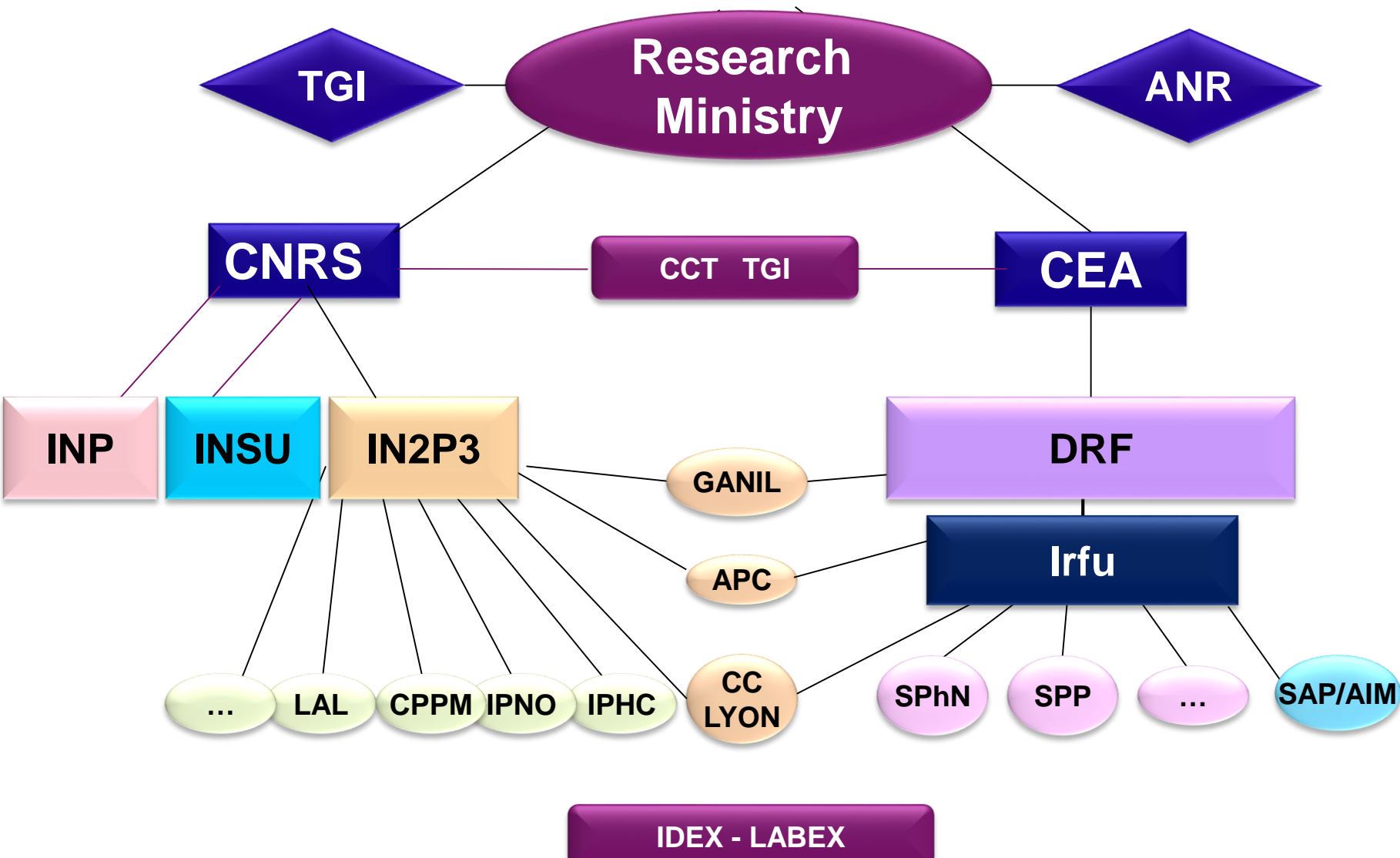
R3B Glad

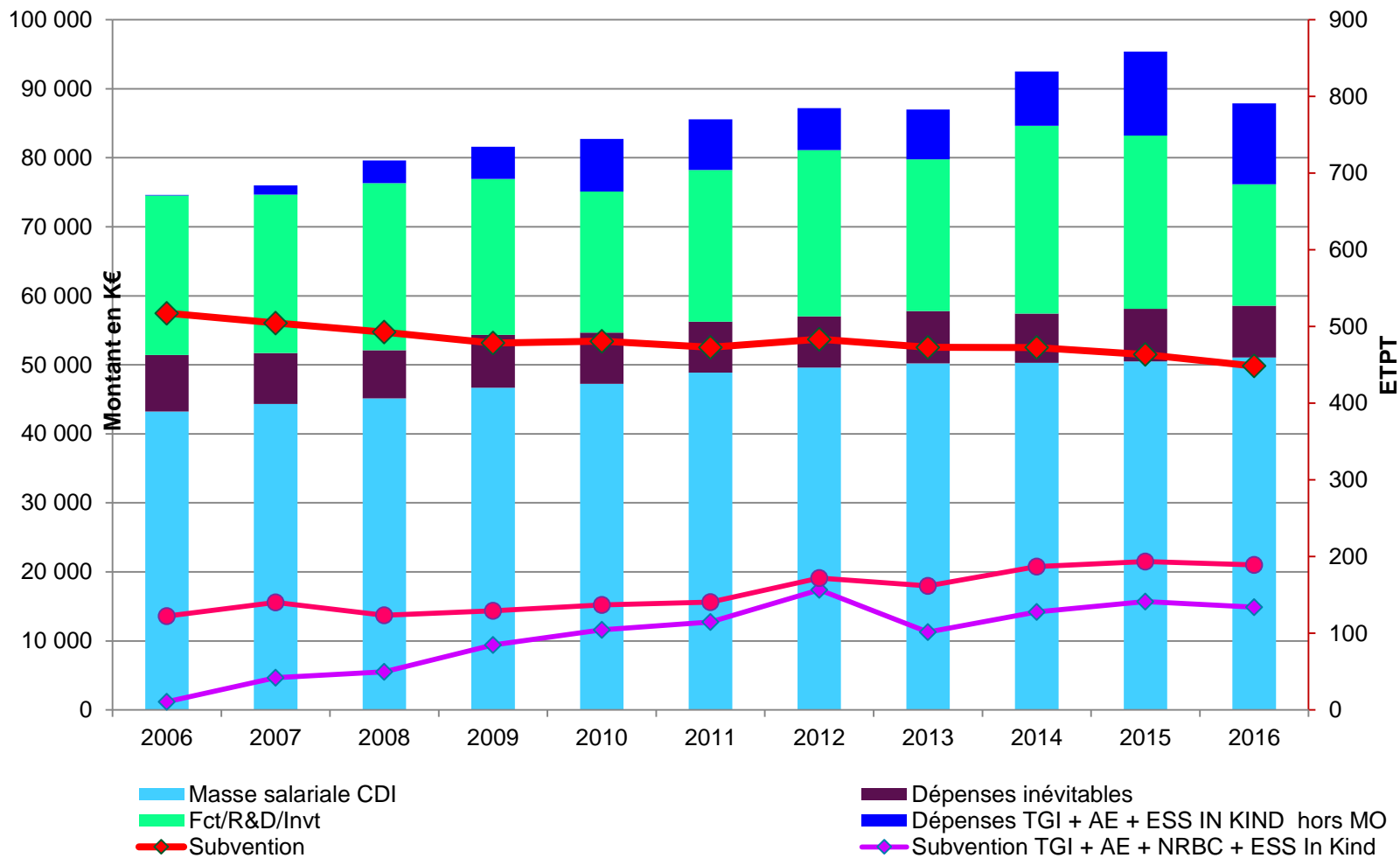
2015 ISEULT 2016 JT60 2017 LNCMI ▽ 2018 magnet HTC 2019 LNCMI 30+ T T 2020 ITER ?

Power circuit

R3B Glad

2015 ISEULT 2016 JT60 ▽ 2017 Hybrid contactor development 2018 Gradient Coil 2019 LNCMI 30+ T T





Decree No 2016-311 of 17 March 2016 on the organization and functioning of the French Alternative Energies and Atomic Energy Commission

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- 5) Develop the fundamental research, applied and technological research in the fields of his activity.
- 6) Contribute to the scientific waking and implementation of the national strategy of research.
- 7) Contribute to the national effort of teaching and education and develop the dissemination of scientific and technological information.

Ifu



Thank you for your
attention

