



3rd meeting of the Board of Funders

Brussels, 30 June 2016

News from the Flagships

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European Commission

Graphene

End of Ramp-up Phase



- **Ramp-up phase:** 1 OCT 2013 to 31 MAR 2016
- **Final Review:** early June, 15 Expert Reviewers
- **Main outcomes:**
 - Excellent progress; many outstanding results
 - Good trade-off between longer term research activities (spintronics, graphene related materials and hetero-junctions, etc.) and technology development
 - Technology and innovation roadmap
 - Excellent management
 - Increasing interest from industry/SMEs (from 17 to 49 beneficiaries in SGA1; and additional industry participation through ~15 associated members)
 - Partnering Project framework implemented
 - International collaboration workshops with US/Japan/Korea

Graphene Highlights & KPIs



Indicator	Target (M30)	Actual (M30)
Number of research agreements	15	51
Scientific Publications	305	782
PhD students and postdocs recruited	139	225
Patent applications	26	47
Industry/academia collaborations	6	165
Prototypes/ Demonstrators	4	36
Products on the market	8	13
Spin-offs created	2	2

Graphene

Major Technology Directions

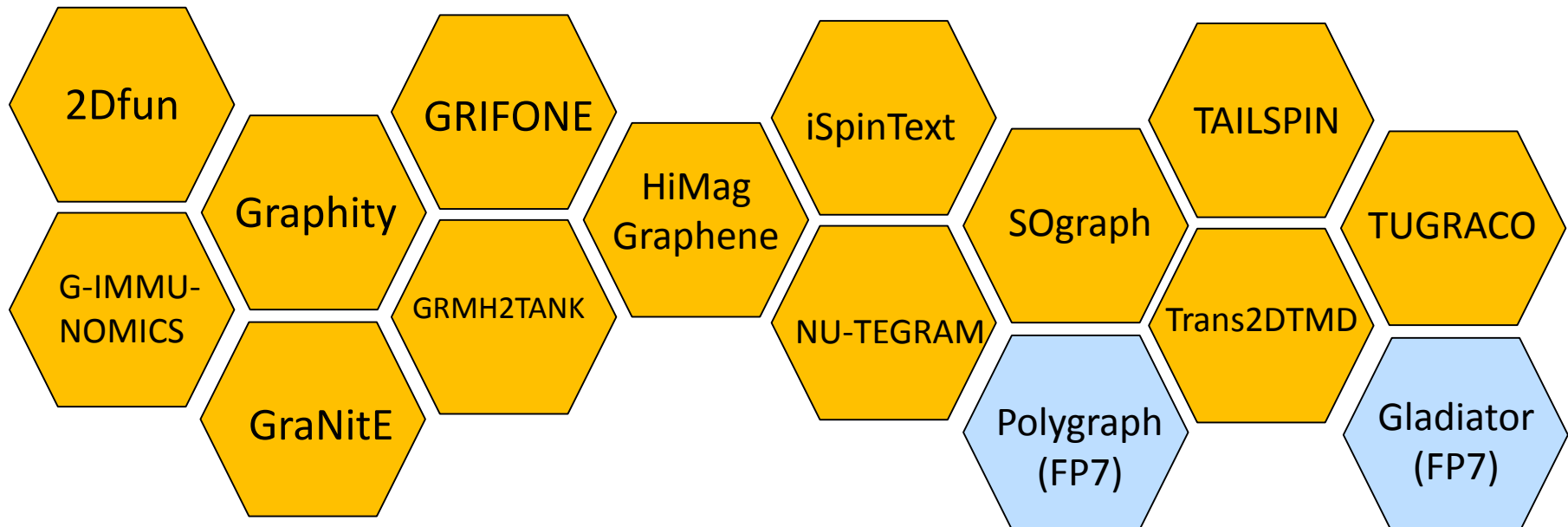


Moving from early ideas to concrete technology development:

- **Most advanced → optoelectronics** e.g., modulators and photodetectors.
Integration at wafer-scale (first pilot line for feasibility of graphene-silicon integration) attracting huge industrial interest – large investments will be needed
 - **Other promising areas:** production of graphene related materials (e.g. inks), sensors (e.g. magnetic sensors, DNA sensing), and nanocomposites (e.g. heat pipe for aeronautics, integration of pressure sensor and photocatalysis for cement)
 - **Questionable role of graphene:** flexible batteries, transistors
- Critical decisions to be made based on industrial investment potential
- Eureka cluster may support projects taking technology to higher TRL levels



- Collaboration starting with projects from joint transnational call (JTC) 2015
- Collaboration mechanism with PPs in place; kick-off meeting held in Budapest (April 2016)
- PPs are represented in Flagship governance; Representatives were elected
- First collaboration meeting with PPs relating to spintronics (Barcelona, May 2016)
- Now over 50 associated members
- **EUREKA cluster** under preparation (led by CDTI / Spain) → fund projects at higher TRLs (6-8)
- JTC 2017 under preparation in FLAG-ERA II



- FET @ Euro-science Open Forum (ESOF) – Manchester, 25 July 2016
- International Cooperation:
 - Workshop with NSF (US): Manchester, 10-12 October 2016
 - Workshop with Korean researchers: 15-16 August 2016, Copenhagen
 - Workshop with Japanese researchers: January 2017, Barcelona
- Graphene connect workshop 31 Nov – 1 Dec. 2016 in Dusseldorf (Composite Europe conference)
- Graphene present at next Mobile World Congress (February 2017)
- Graphene Week (26-30 June 2017, Athens)

- **Ramp-up phase:** 1 OCT 2013 to 31 MAR 2016
- **Final Review:** 3rd week of June, 18 Expert Reviewers + 4 Ethics Reviewers
- **Main outcomes:**
 - Very good progress and many results beyond the state of the art (cognitive neuroscience, proteomic datasets, neuromorphic hardware).
 - First prototypes of the 6 ICT platforms of HBP publicly released
 - Co-design of a Research Infrastructure approach for neuroscience (scaffolding for modelling, simulation, brain atlases), for future brain medicine (medical informatics and data mining) and for future brain-inspired computing
 - New governance in place
 - Responsible Research and Innovation: strong research and stakeholders/public engagement; ethics management structure deployed throughout the consortium
 - European Institute for Theoretical Neuroscience fully operating in Paris

Towards a (federated) Research Infrastructure

- **Co-design** (internal cross-cutting projects, community engagement and a user feedback system)
- **Partnering Project (PP) framework**: 6 first PPs from Member States (transnational calls and others); more PPs from H2020 neuroscience programme (Health SC)

CANON

CHAMPMouse

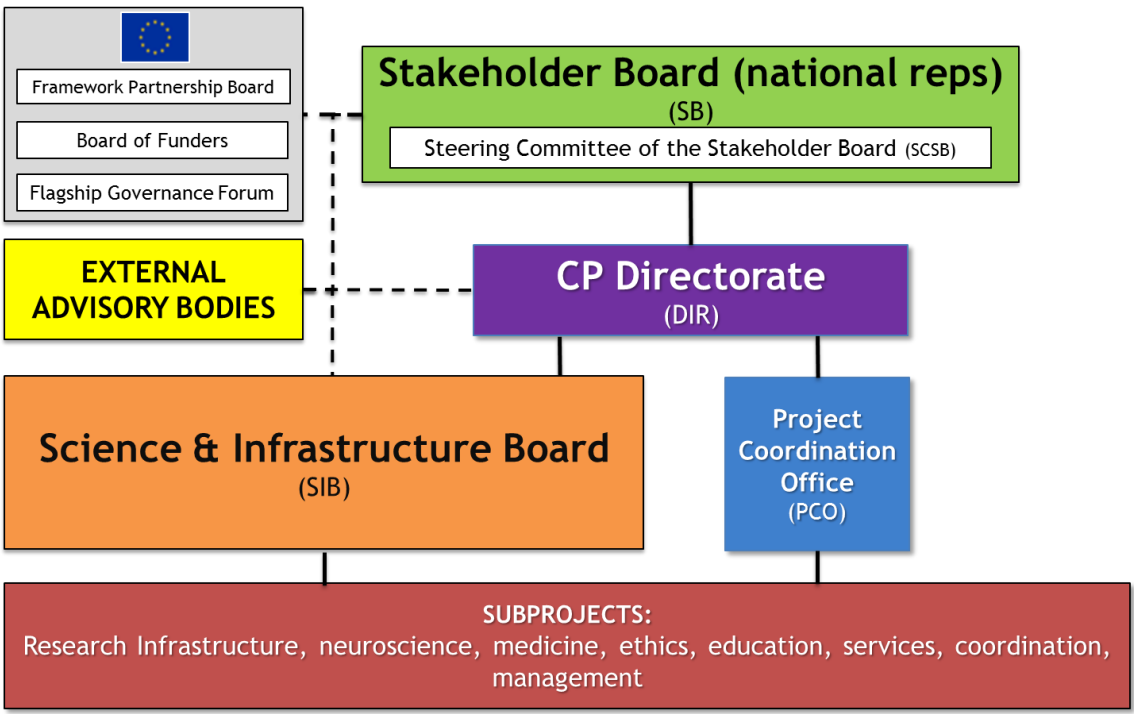
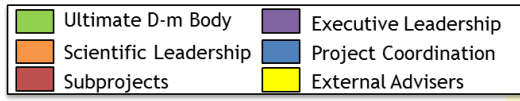
FIND

FUSIMICE

MULTI-LATERAL

SloW-Dyn

- **Data and modelling** strategies
- **System and software engineering**, quality, operation and user support
- Pilots for advancing a federated base infrastructure for computation and data integration including curation and analysis
- **Open-Access**, development of innovation ecosystems, dissemination and education
- HBP **medical informatics** in 5 large hospitals (FR, IT, DE, IL, CH)
- **International cooperation**, esp. with the US BRAIN



- **Stakeholders Board (SB)**
Chair: Matt Lambon-Ralph (U. Manchester)
SB: 19 Country Representatives from all the MS/AC participating in HBP (1 per country)

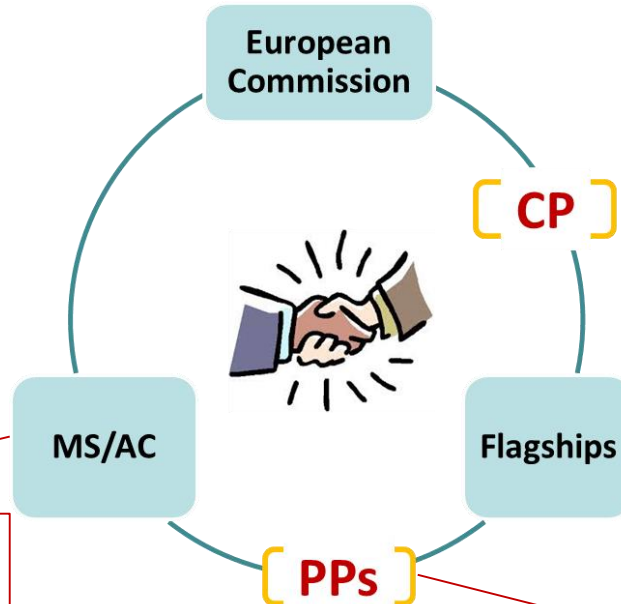
- **The Science and Infrastructure Board (SIB):**
Chair: Katrin Amunts (Julich)
Vice-chairs: Alois Knoll (TU Munich) and Karlheinz Meier (U. Heidelberg)

- **Directorate and Director General**

- **Discussions launched on creating a coordinating Legal Entity**

- [FENS Satellite Event](#), Joint Workshop HBP & Allen Institute for Brain Science, Copenhagen, 1 July 2016
- [FENS Forum of Neuroscience](#), Technical Workshop Introduction to HBP Collaboratory, Copenhagen, 2 July 2016
- HBP Summit, Florence, 12-15 October 2016
- **STOA event @ European Parliament on HBP, Brussels, 29 November 2016**
- Series of NIH / HBP meetings (NYC Rockefeller U. event - 19 Sept.; Brain Initiative event @ Bethesda - Dec, etc.)

New activities in support of the Flagships



H2020 ERA-NET Cofund: **FLAG-ERA II**

www.flagera.eu

- Max EU funding: 6.21 M€; 5 years
- Coordinated by ANR (FR)
- 21 partners & ~25 Assoc. Members
- One Joint Call 2017: ~15M€
- Many additional activities

CSA: **SCOPE**

- 3 partners (FECYT-ES; EPFL-CH, ESF-FR)
- 1M€; 3 years
- Support the networking, coordination and integration of the PPs in the Flagships

THANK YOU!