



GRAPHENE FLAGSHIP

HEADING FOR CORE 2

Jari Kinaret
Chalmers University of Technology
Sweden

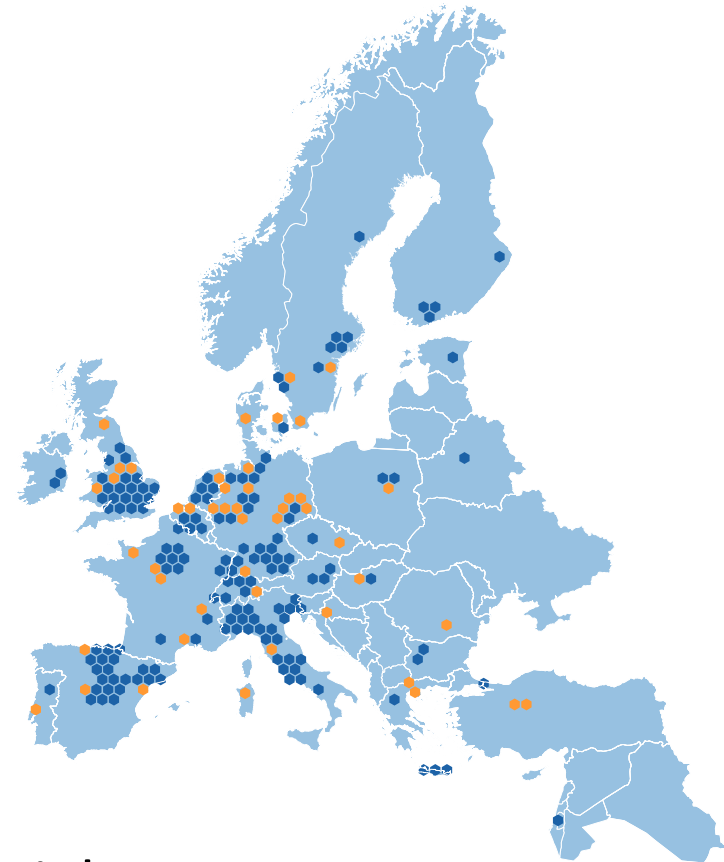


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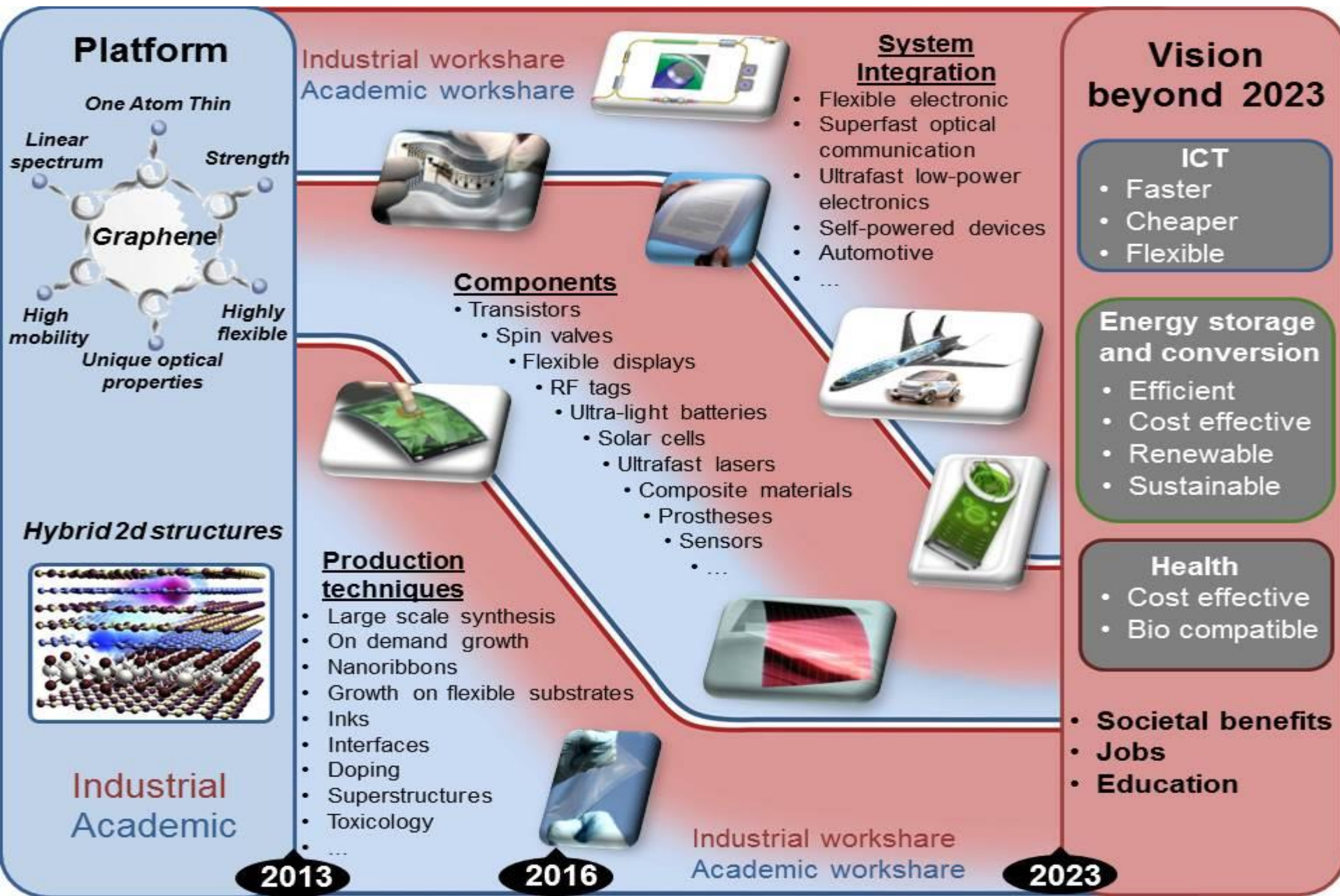


Core 1 project

- Core 1 started on April 1, 2016
 - 155 partners in 23 countries; about 1/3 industry, 1/2 academia and 1/6 other
 - 15 S&T work packages, 5 supporting work packages
 - 450 full-time equivalent persons, over 1,300 individuals
- 70 Associated Members, many of whom are involved in 18 Partnering Projects
- Progress along the value chain materials-components-systems towards higher technology readiness levels



Scientific and technological roadmap





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MWC 2017





Process to plan Core 2

- Continue movement towards higher technology readiness levels but keep the fundamental science component as well
- Focus the activities: combine technology push (*what is doable?*) and market pull (*what is worth doing?*)
- Focusing decisions based on four input streams as outlined in the Framework Agreement:
 - EC reviews (backward-looking)
 - Our internal assessments (forward-looking)
 - Our technology and innovation roadmap
 - Our Science and Technology Forum
- Additional input and advice was received from the Strategic Advisory Council and from the Flagship Interim Evaluation report.
- Focusing involves identifying the most promising areas in terms of industrial impact/technological uncertainty, and requires some changes in the consortium – 28 partners will be leaving, and *ca.* 15 entering

Timeline - past

- *June*: The EB established a Strategy Committee to start the planning of Core 2.
- *October*: The EB decided, based on the report by the Strategy Committee, to strengthen the innovation activities as requested by the EC review, and reserve budget for a number of market-motivated spearhead projects.
- *October-December*: Internal Assessments carried out.
- *January*: The three input streams (EC review, IAs, TIR) were available, and the MP asked the Director to prepare a baseline budget as a starting point for the STF discussions.
- *February*: The Director assigned 70.4 M€ to the work packages, reserved 8.8 M€ for spearhead projects, and left 8.8 M€ unallocated.
- *February*: The WP leadership presented initial plans and requested additional budgets in the STF. Based on its deliberations, the STF recommended WP and spearhead budgets to the EB.
- *March*: The WP and spearhead leadership identified the partners to implement the plans presented in the STF within the recommended budgets. The EB followed the STF recommendation in its proposal to the GA.
- *April*: GA approved the EB proposal. Publication of invitations for Eols.

Timeline - future

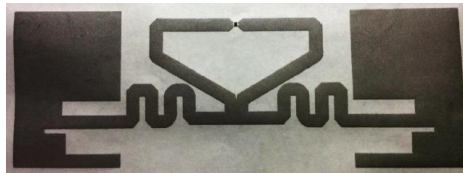
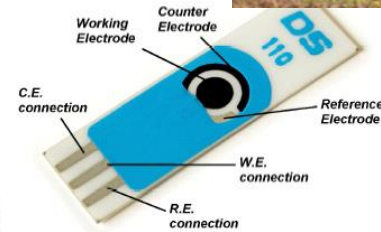
- *Status quo*: A draft proposal exists. Needs work on comparison with the state-of-the-art, definition of KPIs, risks and contingency plans
- *May*: Finalizing proposal. Deadline to submit Eols (May 30).
- *June*: Proposal submission (target date: **June 9**). Evaluation of Eols. GA decision on new partners.
- *September-December*: Grant preparation.
- *October-November*: Necessary FPA amendment submitted.
- *January*: Grant signature.
- *April 1, 2018*: Core 2 project start.

New: Spearhead projects

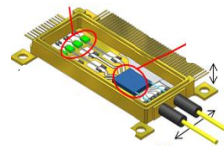


GRAPHENE FLAGSHIP

- *Solar panel farm* on Crete: enhance solar panel performance with graphene electrodes
- *Chemical sensors*: detect stress hormones on skin with a temporary tattoo or plaster
- *Advanced batteries* with graphene
- *Printed electronics*: graphene-based sensors with RFID readout



- *Photonic switch* for fast 5G communication with graphene optical transmitter and receiver



+



- *Smart textiles* with graphene (energy harvesting, sensors etc.)



Expressions of Interest

The Flagship is inviting Eols on 15 specific topics to fill gaps in its value chains:

- Deadline for submission 30 May at 8 a.m..
- Selection process completed this summer
- New partners will enter the consortium on April 1, 2018
- For details, see

www.graphene-flagship.eu



Project

Project

About Graphene Flagship

A Future and Emerging Technology Flagship

Annual Report

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Partnering Mechanism

Expression of Interest

Format of Eol

Ecotoxicity Studies

Proof-of-Concept

Cu Cables

GRM Fire Retardant

Neural Interfaces

Automotive Touch Screen

Flexible Hybrid Integration

Si-graphene Batteries

GRM Aerostructures

GRM Sensors

GRM Sensors End-User

SPE Production

Graphene UV-LEDs

Smart Textiles

Yarns and Textile

Results

Expression of Interest



The Flagship's overriding goal is to take graphene, related layered materials and hybrid systems from a state of raw potential to a point where they can revolutionize multiple industries. This may bring a new dimension to future technology and put Europe at the heart of the process, with a manifold return on the investment as technological innovation, economic exploitation and societal benefits.

This requires the focus of the Flagship to evolve over the years, placing more resources in areas where this transition is more likely. To accomplish this we are looking for new industrial partners that bring in specific industrial and technology transfer competences or capabilities that complement the present consortium. Regarding eligibility to apply, please see the [European Commission \(EC\) rules](#). **Submission deadline is 30 May 2017, 08:00 a.m.**

The selected new partners will be incorporated in the scientific and technological work packages of the second core project under the Horizon 2020 phase of the Flagship that will run during 1 April 2018 – 31 March 2020. The new partners will be requested to sign the relevant agreements with the EC as well as the Consortium Agreement that regulates the relations between the partners in the consortium.

The agreements with the EC include a Framework Partnership Agreement and a Specific Grant Agreement ([model agreements](#)). The present Graphene Flagship Consortium Agreement is being modified for Horizon 2020 to reflect the changes in the governance structure and terminology between the current phase of the Flagship, governed by the rules of FP7, and the first core project, governed by Horizon 2020 rules. The addition of new partners is subject to the approval of the required contract amendment by the EC.

The specific areas of interest and the required capabilities are listed by topic in the left menu. All details on submission is found under "Format..." in the same left menu, including the **submission deadline 30 May 2017, 08:00 a.m.**

Page Contact: [IT Crew](#)

Publishing date: 19 April 2017 13:34

Associated Members and Partnering Projects

- New AMs added almost monthly, new PPs expected in the fall
- Issue with confidentiality (NDA):
 - Check list for bilateral NDA on the level of a WP or a task group is available, but not yet widely implemented (in progress in 1 WP for 2 AMs)
 - A unilateral NDA exists but it is not optimal, neither for AMs nor core project partners
- Timing of topic descriptions for the next Flag-ERA call?

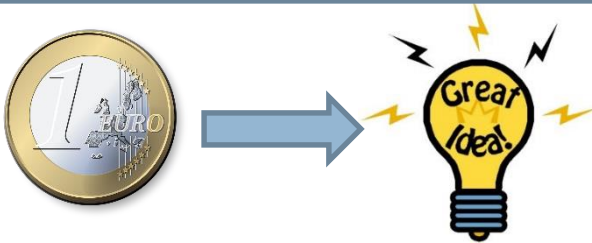


Graphene disruptive technologies

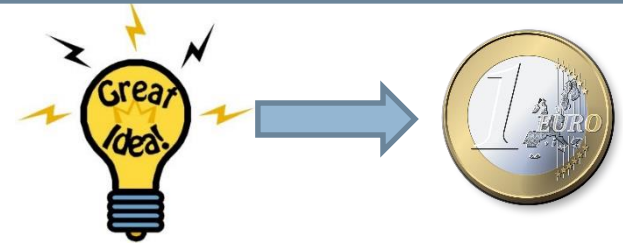
- *from academic laboratories to society*

“FET Flagships are ambitious large-scale, science-driven, *research initiatives* that aim to achieve a visionary goal. The scientific advance should provide a strong and broad basis for future technological *innovation and economic exploitation* in a variety of areas, as well as novel benefits for society.”

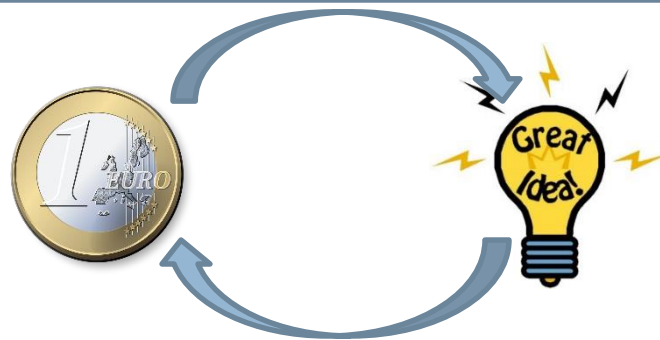
Research:



Innovation:



Company:
($\eta > 1$)



Flagship:
($\eta > 1$)
- How to
measure ?

