FFG
Promoting Innovation.

FET PROACTIVE CALL 2020

DAVID KOLMAN, FFG

21.4.2020

TABLE OF CONTENT

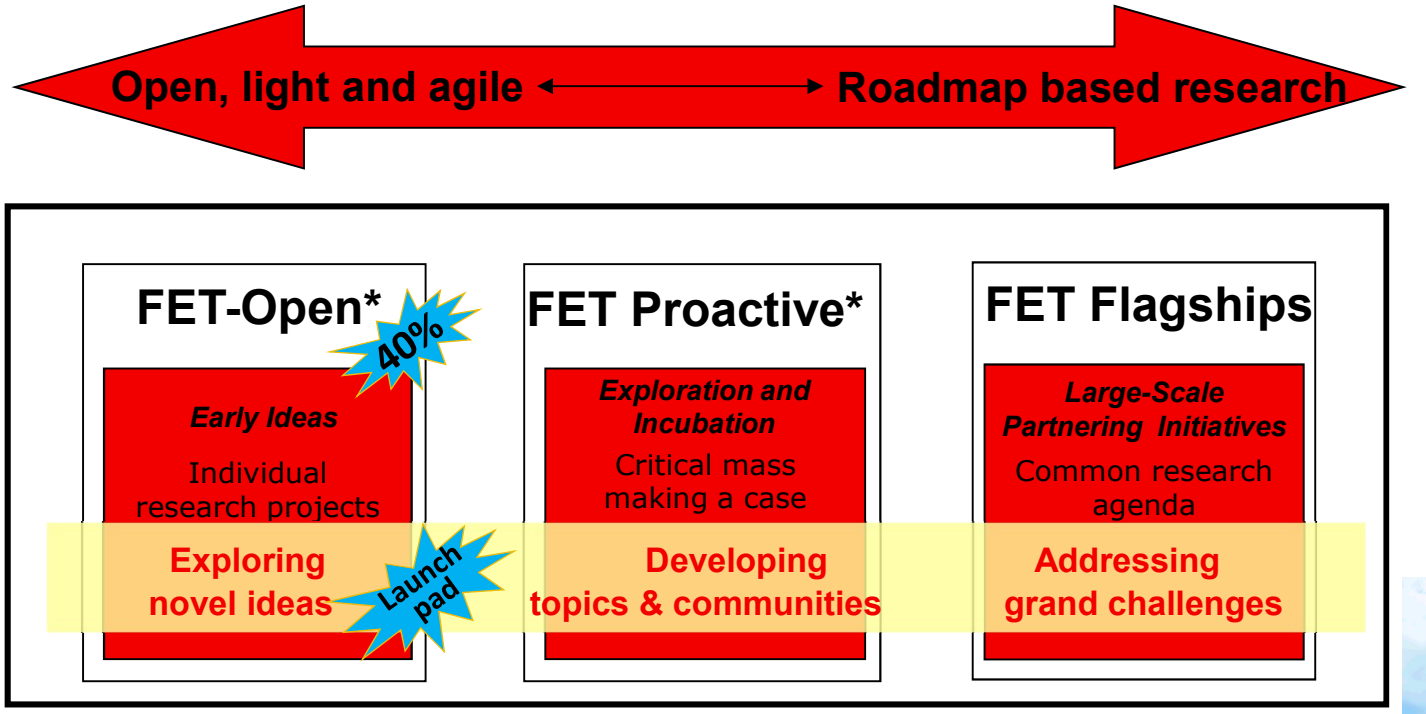
1. FET Proactive general rules and considerations (12 slides)
2. Call 2020 (10)
3. Inspiration from/by the past (7)
4. Proposal Preparation (26)
5. Tips&trics & Usefull links (6)

© FFG I Austrian Research Promotion Agency I www.ffg.at

FET MISSION

© FFG I Austrian Research Promotion Agency I www.ffg.at

FET IN H2020: 3 COMPLEMENTARY PROGRAM LINES



* Part of EIC pilot 2019-2020

FET PROACTIVE: MAIN CHARACTERISTICS

1. Collaborative R&D projects
2. Level of advancement between FET O… …from the 2nd & 3rd pillar
3. Medium-size consort… …le coverage of the respective community

If this is not what you are after, you might be in a wrong webinar

© FFG I Austrian Research Promotion Agency I www.ffg.at

PROJECT OBJECTIVES

Cutting-edge high-risk high-gain R&D projects:

- aiming to demonstrate a new technological paradigm
- developing a solid baseline of knowledge and skills
- fostering the emergence of a broader innovation ecosystem for a new technology and for its future take-up

… to the stage that the results can be handed over to R&I projects under LEIT or societal challenges

Broadly defined topics developed in dialogue with stakeholders

© FFG I Austrian Research Promotion Agency I www.ffg.at

PROJECT SCOPE

. . . bringing together critical mass in the consortium

. . . going beyond research community if sensible

. . . possibly providing (internal) grants to 3rd parties to enhance impact through supporting their small scale experimentation

. . . as a follow-up to a FET Open project or without a FET Open predecessor

© FFG I Austrian Research Promotion Agency I www.ffg.at

PROJECT IMPACT

Proposal has to demonstrate:

1. S&T contribution to the foundation and consolidation of a future technology
2. Potential for future social or economic impact/return
3. Increase of the EU innovation capacity by involvement of key actors of the future (younger researchers, SMEs…)
4. Building of a goal oriented interdisciplinary research community beyond the consortium
5. Emergence of a broader innovation ecosystem around the technology well beyond research

© FFG I Austrian Research Promotion Agency I www.ffg.at

RULES FOR PARTICIPATION: WHO CAN PARTICIPATE

Who can participate:

- Any type of legal entities: academia, industry, end-users…
- From anywhere in the world
- Minimum requirement: at least 3 independent legal entities from at least 3 different EU countries or countries associated to H2020
- Only participants from European, accociated and developing countries get funded*

© FFG I Austrian Research Promotion Agency I www.ffg.at

RULES FOR PARTICIPATION: WHO CAN GET FUNDING?

Entities established in:

- EU Member States (MS), or
- Associated Countries (AC): Albania, Armenia, Bosnia-Herzegovina, Faroe Islands, Georgia, Iceland, Israel, Macedonia, Moldova, Montenegro, Norway, Serbia, Switzerland, Ukraine, Tunisia, Turkey
- 'Developing countries' as listed in Annex A of H2020, e.g. Argentina, Bolivia, Colombia, Costa-Rica, Chile, Egypt, Indonesia, Jordan, Kenya, Malaysia, Morocco, Mongolia, Nicaragua, Pakistan, Panama, Peru, Philippines, Venezuela, Vietnam…
- International European interest organisations, e.g. CERN, EMBL, ESA, EUROFUSION, XFEL…

© FFG I Austrian Research Promotion Agency I www.ffg.at

What rules apply to the UK as a participant in the expression of interest SC1-PHE-CORONAVIRUS-2020?

Published on : 04-02-2020 3:56 PM **FAQ ID :** 12721

The Withdrawal Agreement as agreed between the European Union and the United Kingdom entered into force on 1 February 2020. In overall terms, on the basis of the Withdrawal Agreement, the UK-based legal entities **will continue to be fully eligible to participate and receive funding in the current 2014-2020 EU programmes, including Horizon 2020, as if the UK were a member state until the closure of these programmes**, unless security considerations apply. This means that UK beneficiaries can continue – without interruption – to receive grants awarded under the current and previous MFFs until their end dates, even if these are after 2020.

© FFG I Austrian Research Promotion Agency I www.ffg.at

FUNDING RATE(S)

- FET Proactive = Research and Innovation Action:
- Funding rate 100% of eligible direct costs*
- + 25% thereof to cover indirect costs
- for any type of legal entity

© FFG I Austrian Research Promotion Agency I www.ffg.at

ELIGIBLE DIRECT COSTS

- PERSONAL COSTS
- Travel costs and related subsistence allowance
- Costs for other [minor] goods and services
- Costs for subcontracting or for providing support to 3rd parties (cascade grants)
- Depreciation costs for equipment, infrastructure or other assets
- Capital and/or operating costs of Large Research Infrastructures (LRI)

© FFG I Austrian Research Promotion Agency I www.ffg.at

PROJECT PARAMETERS

Typical project:

- Budget: 4-7 M€
- Duration: ≤ 5 years
- Consortium: 6-12 partners

Medium size proposals: 30 pages

© FFG I Austrian Research Promotion Agency I www.ffg.at

EVALUATION CRITERIA

Evaluation criteria:

Criterion	Treshold	Weight
Excellence	4/5	60%
Impact	3.5/5	20%
Implementation	3/5	20%

Past success rates:

- 15-25%, depending on the specific topic

© FFG I Austrian Research Promotion Agency I www.ffg.at

TABLE OF CONTENT

1. FET Proactive general rules & considerations
2. Call 2020
    a. Emerging paradigms and communities
    b. Environmental intelligence
    c. Neuromorphic computing
3. Inspiration from/by the past
4. Proposal Preparation
5. Tips&trics & Usefull links

© FFG I Austrian Research Promotion Agency I www.ffg.at

FETPROACT-EIC-07-2020: EMERGING PARADIGMS & COMMUNITIES

1. AI for social interaction (Virtual Reality)
2. Zero-emissions energy generation
3. Digital twins for life sciences (models of biological structures/processes)
4. Measuring the unmeasurable - Sub-nanoscale science for Nanometrology

© FFG I Austrian Research Promotion Agency I www.ffg.at

AI FOR SOCIAL INTERACTION (VIRTUAL REALITY)

Issues:

- Increasing virtualisation, unprecedented social scale information load and ubiquitous intelligence, leading to currently acute issues of trust, the nature of social relationships, believe formation, crowd- and organisation dynamics, permeation of private and public spheres, social exclusion
- Projects on human-centric responsible AI can address these by bringing more social intelligence in the interaction environment and greater user-, contextual- and social awareness, and also through a tighter coupling with sensori/motor- and cognitive processes using, for instance, multimodal XR setups, or minimally invasive interfaces like spatial audio, smart skins, haptics, robotic devices and wearables
- Projects will also investigate whether and how the perceptual- and sociocultural parameters implicit in natural, context-rich social interaction carry over to such virtual or hybrid settings.
- Influence on self-perception, well-being (addiction), acceptance, learning and brain-development/adaptation should also be considered, especially in scenarios of extensive and always-on use.

© FFG I Austrian Research Promotion Agency I www.ffg.at

ZERO-EMISSIONS ENERGY STORAGE & CONVERSION

Objectives:

- Energy storage and conversion that is clean, compact and low-cost, aimed at decentralised and/or mobile or portable uses in specific application contexts, for instance, in industry, in the transport sector, in sustainable housing, remote places or in emergency situations.
- Novel concepts and breakthrough techniques with zero emissions of greenhouse gasses and a minimal use of rare or toxic materials have to be explored.
- Research areas could include storage and conversion of clean energy (e.g., solar, wind, geothermal), solar fuels and solar chemicals, possibly based on recycled and atmospheric CO_2 or other.
- Research on electro-chemical batteries is *not* addressing this sub-topic.
- Where relevant, circular design and/or high degree of recyclability must be addressed.

© FFG I Austrian Research Promotion Agency I www.ffg.at

DIGITAL TWINS FOR LIFE SCIENCES

Objectives:

- close integration and real-time interaction of computational models of biological structures and systems (from biochemical pathways to cells, tissues, organs and individuals), with non-destructive analysis, advanced imaging and sensing techniques for such biological systems, mechanisms and processes
- deriving and updating the digital twin from longitudinal and individual data, and using information from non-destructive analysis, imaging, sensing and monitoring of its biological counterpart, using AI and taking the achievements of systems biology, mechanobiology, metabolomics and systems medicine into account
- including dynamics at multiple spatio-temporal scales
- either in vivo at whole-body (e.g., using wearable and implantable sensors) or organ level; or in vitro (e.g., for interacting cells and organoids, 3D cell co-cultures, organ/body-on-chip)

© FFG I Austrian Research Promotion Agency I www.ffg.at

MEASURING THE UNMEASURABLE - SUB-NANOSCALE SCIENCE FOR NANOMETROLOGY

Objectives:

- new techniques, for example, physics-, biochemistry- and chemistry-based methods incorporating nano and picometre-length scales in the spatial domain with femto- and atto-seconds in the temporal domain.
- addressing research from a novel measurement concept up to a technique and/or method including prototype measuring devices/setups and procedures, and sound metrological aspects like quantification of uncertainty or traceability.
- seeking to approach theoretical limits in challenging domains (physical, chemical, biological) while minimising any potential damage or change to the object being measured.
- full 3D characterisation (tomography) or the application of metrological procedures to transient phenomena on a sub-nanosecond time-scale…

Test cases:

- controlling morphology impacting chemical properties in nano-photonic devices or battery electrodes
- integrating metrology with sub-nanoprinting, nano-engineering or self-characterisation techniques
- measurements of heat transfer across interfaces down to the atomic size level
- characterisation of the dynamics of molecular interactions in or with biological systems

© FFG I

FETPROACT-EIC-08-2020: ENVIRONMENTAL INTELLIGENCE

Objectives:

Creating new synergies between the distant disciplines of environmental modeling, advanced sensor research, social sciences and AI…
… that lead to systemic understanding of the socio-environmental inter-relationships

Topics:

1. New techniques for modelling and predicting socio/environmental evolution across different time scales
2. Radically novel approaches to resilient, reliable and environmentally responsible in-situ monitoring

© FFG I Austrian Research Promotion Agency I www.ffg.at

NEW TECHNIQUES FOR MODELLING AND PREDICTING SOCIO/ ENVIRONMENTAL EVOLUTION ACROSS DIFFERENT TIME/SPACIAL SCALES

Objectives:

- combine, analyse and interpret data from in-situ and remote sensing technologies, other public data sources (e.g., historical data, planning documents, legislation), and data or models/theories from human behavior, economics and the social sciences by making recourse to AI if/as needed
- focus on modelling and tracking of the interplay between natural and societal systems…

© FFG I Austrian Research Promotion Agency I www.ffg.at

RADICALLY NOVEL APPROACHES TO RESILIENT, RELIABLE AND ENVIRONMENTALLY RESPONSIBLE IN-SITU MONITORING

Objectives:

- In-situ sensing technologies (physical, chemical, biological, behavioral) for environmental monitoring, in particular favoring sensors for parameters and environments that are currently under-sampled but at the same time critical for improving predictive models for understanding environmental processes.
- looking for ground-breaking concepts of affordable sensor design and deployment, maintenance, retrieval and/or recycling, based on concepts such as self-deployment, self-awareness, adaptation, artificial evolution, self-repair and controlled decomposition; or using edge computing, distributed AI or new concepts from micro-robotics to optimise sensing or monitoring frequency.
- Projects are to focus on one or a few critical resources (e.g., water, air) establishing fundamental advances on the most critical challenges that will underpin a step improvement in monitoring, analysis and management of important social/environmental processes.
- Advanced research on the networking aspects is not addressing this sub-topic.

© FFG I Austrian Research Promotion Agency I www.ffg.at

FETPROACT-09-2020: NEUROMORPHIC COMPUTING

Objectives:

- exploit a wider range of biological principles
- from the hardware level up (e.g. neuro-mimicking materials and principles – electronic, photonic, ionic – , 3D networks, higher degrees of connectivity, cross-connectivity, spiking, rate-based and population-level neuronal dynamics, oscillations, plasticity, parallelism…)
- and from the cognitive level down, by developing the related algorithms and programming framework
- … in order to create neuromorphic technologies that outperform current systems
- … demonstration in systems or artefacts

© FFG I Austrian Research Promotion Agency I www.ffg.at

FET PROACT DEADLINES & BUDGET

Emerging paradigms & communities:

Date	Budget
02 July 2020	56 M€

Neuromorphic Computing:

Date	Budget
17 June 2020	15 M€

Environmental Intelligence:

Date	Budget
02 July 2020	18 M€

Outcomes of evaluation: 5 months after the deadline
Signature of grant agreements: 8 months after the deadline

© FFG I Austrian Research Promotion Agency I www.ffg.at

TABLE OF CONTENT

1. FET Proactive general rules & considerations
2. Call 2020
3. Inspiration from/by the past
4. Proposal Preparation
5. Tips&trics & Usefull links

© FFG I Austrian Research Promotion Agency I www.ffg.at

FET PROACTIVE: PAST H2020 CALLS

Four deadlines in H2020 so far:

Date	Status
1. April 2014	13 RIAs funded
12. April 2016	12 RIAs funded
2. March 2018	16 RIAs funded
11. November 2019	22+13 RIAs funded

© FFG I Austrian Research Promotion Agency I www.ffg.at

PROJECT A-LEAF

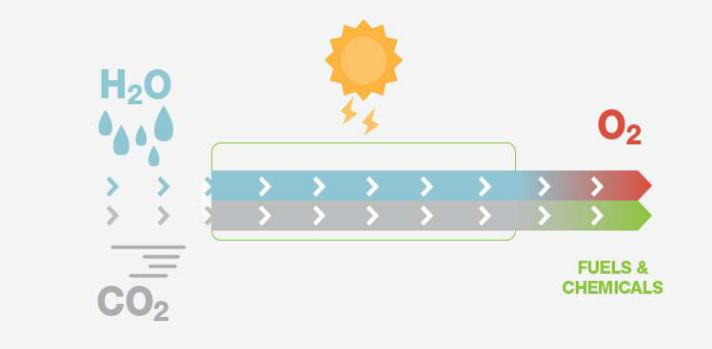
Artificial photosynthesis for fuels and chemicals

The project goal

To create an artificial photosynthesis device that uses sunlight to convert water and carbon dioxide into fuels and other chemicals, mimicking the action of plant leaves.

How?

- Theoretical and experimental studies of CO_2/water reactions at surfaces to make fuels
- Optimisation of results and transfer to photo-electrochemical cells
- Scaling up results in a photoelectrocatalytic device
- Rare and/or expensive materials will be avoided



Impact on

- **Science** – photovoltaic materials and surface chemistry
- **Technology –** photoelectrocatalytic devices for solar energy capture
- **Society –** potential for a carbon-neutral fuel cycle using conventional hydrocarbon fuels.

© FFG I Austrian Research Promotion Agency I www.ffg.at

PROJECT BRAINCOM

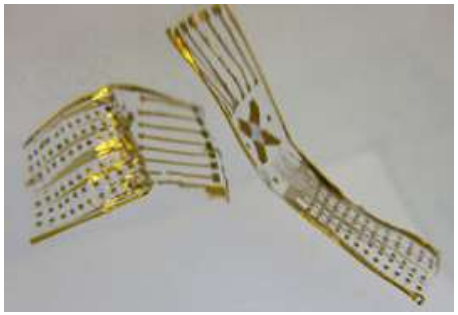
High-density cortical implants for cognitive neuroscience and rehabilitation of speech using brain-computer interfaces

The project goal

Develop a new generation of very large-scale neuroprosthetic cortical devices based on novel materials and technologies to further basic understanding of cortical speech networks and facilitate rehabilitation in disabled patients using new brain-computer paradigms.

How?

- Develop large-area cortical and intra-cortical neural interfaces for recording and stimulation
- Develop H/W (ASICs) to handle very large number of signal channels
- Use animal studies to understand link between surface and intra-cortical signals
- Study distributed brain circuits of speech before and after a stroke
- Clinical testing to develop decoding strategies for speech based on cortical activity



Flexible electrodes (BRAINCOM)

Impact on

- **Science** – information coding in neural signals
- **Technology –** flexible neural electrodes using new materials
- **Society –** better rehabilitation for patients after a stroke

© FFG I Austrian Research Promotion Agency I www.ffg.at

PROJECT MAGENTA

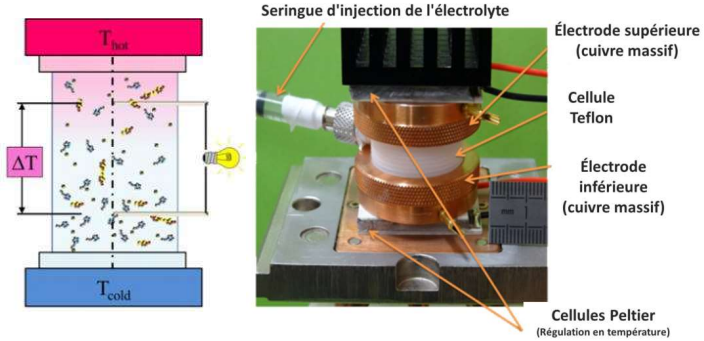
Magnetic nanoparticle based liquid energy materials for thermoelectric devices

The project goal

To develop novel thermoelectric materials based on ionic ferrofluids for use in devices to convert waste heat produced by many aspects of daily life into more useful forms of energy (e.g. electrical).

How?

- Experiments and theory used to understand thermoelectric properties of various ionic ferrofluids
- Materials optimised to maximise the thermoelectric effect
- Construction of prototype thermoelectric cells and testing in realistic conditions



Power generating cell (MAGENTA / CEA)

Impact on

- **Science** – novel thermoelectric materials
- **Technology –** new devices for energy harvesting in "self powered" devices
- **Society –** more efficient use of energy resources

© FFG I Austrian Research Promotion Agency I www.ffg.at

PROJECT FOXES

Fully Oxide-based Zero-Emission and Portable Energy Supply

The project goal

To provide a clean, compact, low-cost and scalable high energy density solution for powering IoT devices such as wireless sensor nodes.

How?

- The energy supply system is a combination of a lead-free perovskite solid cell and a multilayer relaxor thin film capacitor with high energy density.
- Coupling these two devices allows solar energy surplus to be stored in the capacitor and being used for periods of time when solar light is not available.

Impact on

- **Science** – novel energy capture and storage method
- **Technology –** new opportunities to power IoT nodes
- **Society –** next generation network of connected devices

© FFG I Austrian Research Promotion Agency I www.ffg.at

ABSTRACTS OF ALL FET PROACTIVE PROJECTS

European Commission | CORDIS EU research results

© FFG I Austrian Research Promotion Agency I www.ffg.at

SUCCESSFUL AUSTRIAN FET PROACTIVE APPLICANTS

- Project A-LEAF (2016), TU Wien, Ms. Ulrike Diebold, www.a-leaf.eu, www.iap.tuwien.ac.at/www/surface/group/diebold
- Project CresPace (2016), Meduni Wien, Ms. Mariann Gyöngyösi, www.crespace.eu, www.meduniwien.ac.at/web/index.php?id=688&res=mariann_pavone-gyoengyoesi
- Project Hiveopolis (2018), Uni Graz, Mr. Thomas Schmickl (coord.), www.hiveopolis.eu, http://zool33.uni-graz.at/artlife/schmickl
- Project Harvestore (2018), TU Wien, Mr. Jürgen Fleig, www.harvestore.eu, https://tiss.tuwien.ac.at/adressbuch/adressbuch/person/43182
- NeuHeart (2018), MU Wien, Mr. Francesco Moscato, www.neuhearth2020.eu, www.meduniwien.ac.at/web/index.php?id=688&res=francesco_moscato

© FFG I Austrian Research Promotion Agency I www.ffg.at

TABLE OF CONTENT

1. FET Proactive general rules & considerations
2. Call 2020
3. Inspiration from/by the past
4. Proposal Preparation
5. Tips&trics & Usefull links

© FFG I Austrian Research Promotion Agency I www.ffg.at

SOURCE OF ALL WISDOM:
EC FUNDING & TENDERS PORTAL

Funding & Tenders Portal of the European Commission:

ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/h2020

- Filter by programme part: Excellent Science
  - Filter by call: H2020-FETPROACT-2018-2020
    - FETPROACT-EIC-07-2020
    - FETPROACT-EIC-08-2020
    - FETPROACT-09-2020

** You need an ECAS account (universal European Commission's account) to start your proposal submission*

© FFG I Austrian Research Promotion Agency I www.ffg.at

PROPOSAL COMPOSITION
TEMPLATE STRUCTURE

- Part A: Administrative part of the proposal (online)
- Part B: Narrative part (core proposal; word document)
  - Section 1: S&T Excellence
  - Section 2: Impact
  - Section 3: Implementation
  - Section 4: Members of the consortium (Additional information)
  - Section 5: Ethics and Security (Additional information)

© FFG I Austrian Research Promotion Agency I www.ffg.at

PROPOSAL COMPOSITION COMMENTS

- Page limit: Sections 1-3 together are strictly limited to **30** pages,
  No page limit applies to Sections 4-5.
- The structure of the template has to be strictly followed!
- Description/content of sections 1-3 matches the description/content of the respective evaluation criteria
  => Familiarize yourself with the evaluation criteria before writing!

© FFG I Austrian Research Promotion Agency I www.ffg.at

EVALUATION CRITERIA

- Watch out for deviations from the standard rules of H2020:

  S&T Excellence is the name of the FET game!

Criterium	Treshold	Weight
Excellence	**4/5**	**60%**
Impact	3.5/5	20%
Implementation	3/5	20%

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION EXCELLENCE:
TEMPLATE SUB-HEADINGS

1. Objectives
2. Relation to the work programme
3. Concept & methodology
    a) Concept
    b) Methodology
4. Ambition

Threshold: 4/5, Weight: 60%

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION EXCELLENCE:
WHAT EVALUATORS EVALUATE

1. Clarity of long-term vision of a science-enabled technology.
2. Concreteness and ambition of the proposed science-to-technology breakthrough that addresses this vision.
3. Range and added value from interdisciplinarity, novelty and non-incrementality of the research proposed.
4. High-risk of the research proposed and plausibility and flexibility of the approach

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION EXCELLENCE: COMMENTS

- Position your proposal well within the FET landscape/FET Proactive level
- Objectives (goals) should be SMART*
- They should be mirrored in/consistent with Impacts (Section 2) and Tasks (Section 3)
- Methodology should allow for proper measures to be taken in case of failures
- Claims (esp. State of the Art) should be supported by brief references

© FFG I Austrian Research Promotion Agency I www.ffg.at

* SMART OBJECTIVES

Specific	Measurable	Attainable	Relevant	Time-Bound
Make sure your goals are focused and identify a tangible outcome. Without the specifics, your goal runs the risk of being too vague to achieve. Being more specific helps you identify what you want to achieve. You should also identify what resources you are going to leverage to achieve success.	You should have some clear definition of success. This will help you to evaluate achievement and also progress. This component often answers how much or how many and highlights how you'll know you achieved your goal.	Your goal should be challenging, but still reasonable to achieve. Reflecting on this component can reveal any potential barriers that you may need to overcome to realize success. Outline the steps you're planning to take to achieve your goal.	This is about getting real with yourself and ensuring what you're trying to achieve is worthwhile to you. Determining if this is aligned to your values and if it is a priority focus for you. This helps you answer the why.	Every goal needs a target date, something that motivates you to really apply the focus and discipline necessary to achieve it. This answers when. It's important to set a realistic time frame to achieve your goal to ensure you don't get discouraged.

© Canadian Management Centre

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION IMPACT:
TEMPLATE SUB-HEADINGS

1. Expected impacts
    - in the work program
    - not mentioned in the work program
    - barriers to achieving this impacts
2. Measures to maximize impact:
    a) Dissemination and exploitation of results
    b) Communication activities

Threshold: 3.5/5, Weight: 20%

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION IMPACT:
WHAT EVALUATORS EVALUATE

1. The extent to which the outputs of the project would contribute to the expected impacts mentioned in the work programme under the specific FET topic.
2. Effectiveness of measures and plans to disseminate and use the results (including management of IPR) and to communicate the project to different target audiences.

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION IMPACT:
STANDARD REQUIREMENTS

- Impact = Impact *after* the end of the project
- "Measures to maximize impact" have to include*:

a) *Plan* for Exploitation and Dissemination of Results (PEDR)

- *Strategy* for Knowledge Management and Protection

  …incl. measures for Open Access to scientific publications

- *Strategy for* Management of Research Data (DMP)

  …incl. measures for Open Access to (underlying) research data

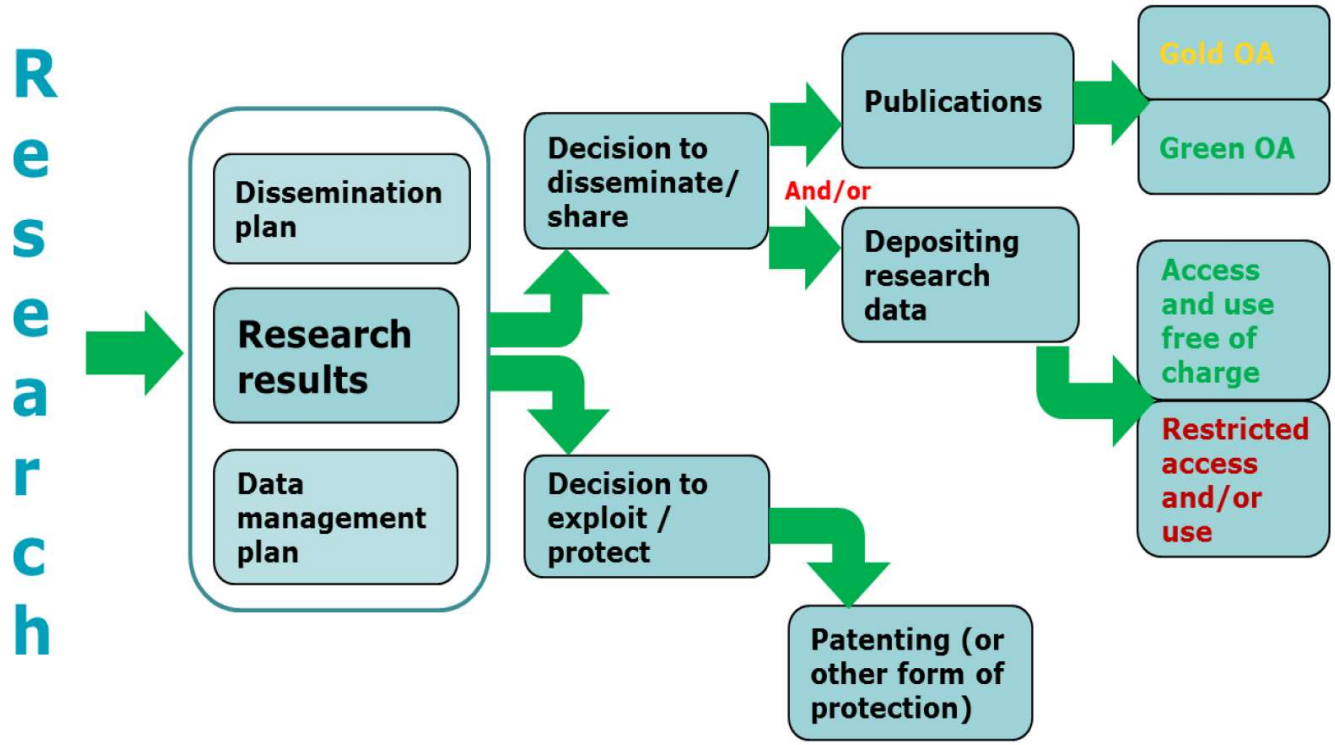
b) *Strategy* for Communication activities

- Promotion of the project and its achievements

** In FET Proact typically ~ 1-2 pages*

© FFG I Austrian Research Promotion Agency I www.ffg.at

OPEN ACCESS TO PUBLICATIONS* AND RESEARCH DATA IN THE CONTEXT OF DISSEMINATION AND EXPLOITATION



* Open Access ≠ Obligation to publish

SECTION IMPACT: COMMENTS (1)

- Put your work in broader context:
  - societal and economic impact & relevance
- Quantify your statements/targets if possible (potential applications and relevant markets…)
- Address briefly how to deal with obstacles to impact (costs, competing technologies, market/customer inertia/acceptance, legal…)

Business plan usually not relevant in this stage of research

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION IMPACT: COMMENTS (2)

- Dissemination & Communication: be creative and specific
  (which conferences; how many students in Summer Schools; industry in advisory board; debate the new venues with citizens; promo movie…)
- Data Management Plan & Knowledge Management: outline your principles
  (which data you expect and where you plan to deposit it;
  how will you protect your knowledge and how will it be made available…)
  - *Repositories for publications: www.openaire.eu*
  - *Repositories for data: www.zenodo.org, www.re3data.org*
- Whether you appoint a person, a body or a process to IP scouting and management, be consistent with Section 3!

Exploitation includes use in further research activities (outside of your project)

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION IMPACT:
EXAMPLE EXPLOITATION & DISSEMINATION

- The consortium will assign a person as ***Impact Coordinator*** whose responsibility it is to control all dissemination and exploitation actions (DEA). Each WP leader reports to the IC every 6 months about all executed DEA as well as DEA planed for the next 6 months. The IC Impact coordinator supports the WP leaders by helping to maximize DEA integration across partners within WP as well as between WPs…
- ***Dissemination channels*** towards the global ***research community*** are well-established: Findings will be published in ***peer-reviewed journals*** such as Phys. Rev. Lett., Chem. Proc., Phys. Rev. A and C, Rev. Sci. Instr., or Appl. Phys. Lett.; The design of experiments will be described in (openly accessible) PhD theses. ***International conferences*** (ICAP, DAMOP, CLEO, ICOLS, EFTF) will allow us to reach a broad scientific audience. We anticipate that over 20 peer-reviewed papers, 200 conference contributions, and 60 invited talks will emerge from our activities.

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION IMPACT:
EXAMPLE EXPLOITATION & DISSEMINATION (2)

- ***To exploit technology and results*** we will contact potential groups and companies well before the gravity clock is fully operational, through personal contacts, national technology transfer services, and a dedicated workshop (see work plan)…
- The exploitation of sub-systems, such as alpha gravitometers and XUV detonators, will find diverse applications already during the funding period. Research groups from neutrino physics and neural cryptography are already waiting for technology to mature. Detonator systems will be developed either directly by or in close contact to partner PUSTICA. Further **market-relevant findings** can be expected in the area of sample fabrication, in particular liquified golphing. Budget for patent enquiries is reserved and will be dynamically allocated to partners.

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION IMPACT:
EXAMPLE EXPLOITATION & DISSEMINATION (3)

- ***Experimental data, design blueprints & fabrication process descriptions*** will be stored digitally… Funds are reserved to secure access to data beyond the 4-year project duration. Data will be made accessible to interested parties outside the consortium, possibly after a reasonable time delay.
- The consortium is ***committed to open access*** concerning results and data. Where possible, we will support online journals. Publications will be placed on the *argid* server on the day of submission ("green" open access). Most journals offer open access upon payment of a reasonable fee (e.g. 1700 USD for Phys. Rev. Lett., "gold" open access). Funds to support this are reserved in the budget.

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION IMPACT:
EXAMPLE COMMUNICATION

- Our research lends itself well to **popularization**. Partners put a strong emphasis on the presentation of their research (products) to non-experts: 14000 people have visited PTB in 2013 (1600 non-scientists), and more than 2000 pupils enjoy lab tours at the ARMI in Brünn annually. Each institution will intensify contact with local PR agencies and journalists, increasing appearances in local and national newspapers, both in print and online, as well as news articles in the institute's and university's webpages.
- To reach an international online audience, the central information hub will be the dedicated and carefully updated ***webpage*** ***www.clockwise.eu*** (already secured) together with a Facebook account. Another centerpiece of the media appearance will be a professional film, featuring interviews with researchers and in-depth explanations of our research. This film will be posted online on platforms such as *McGee*.

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION IMPLEMENTATION:
TEMPLATE SUB-HEADINGS

1. Work plan – Work packages, deliverables
2. Management structure, milestones and procedures
3. Consortium as a whole
4. Resources to be committed

- *Threshold: 3/5, Weight: 20%*

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION IMPLEMENTATION: WHAT EVALUATORS EVALUATE

1. Coherence and effectiveness of the work plan to achieve project objectives and impacts, including adequate allocation of resources to tasks and partners.
2. Appropriateness of the research and innovation management structures and procedures.
3. Role and complementarity of the participants and extent to which the consortium as a whole brings together the necessary expertise.

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION IMPLEMENTATION: COMMENTS (1)

- Consortium fit for purpose:
  - No more no less that what you need
  - Though sufficient scope/mass (consolidation of the community)
  - No false considerations (friendship, new member states…)
  - *Include* SMEs, young researchers, females… where it makes sense!
- Budget/ Person Months:
  - Construct bottom-up and evtl. correct to fit into the envelope given
  - You can purchase equipment but only depreciation costs are eligible

© FFG I Austrian Research Promotion Agency I www.ffg.at

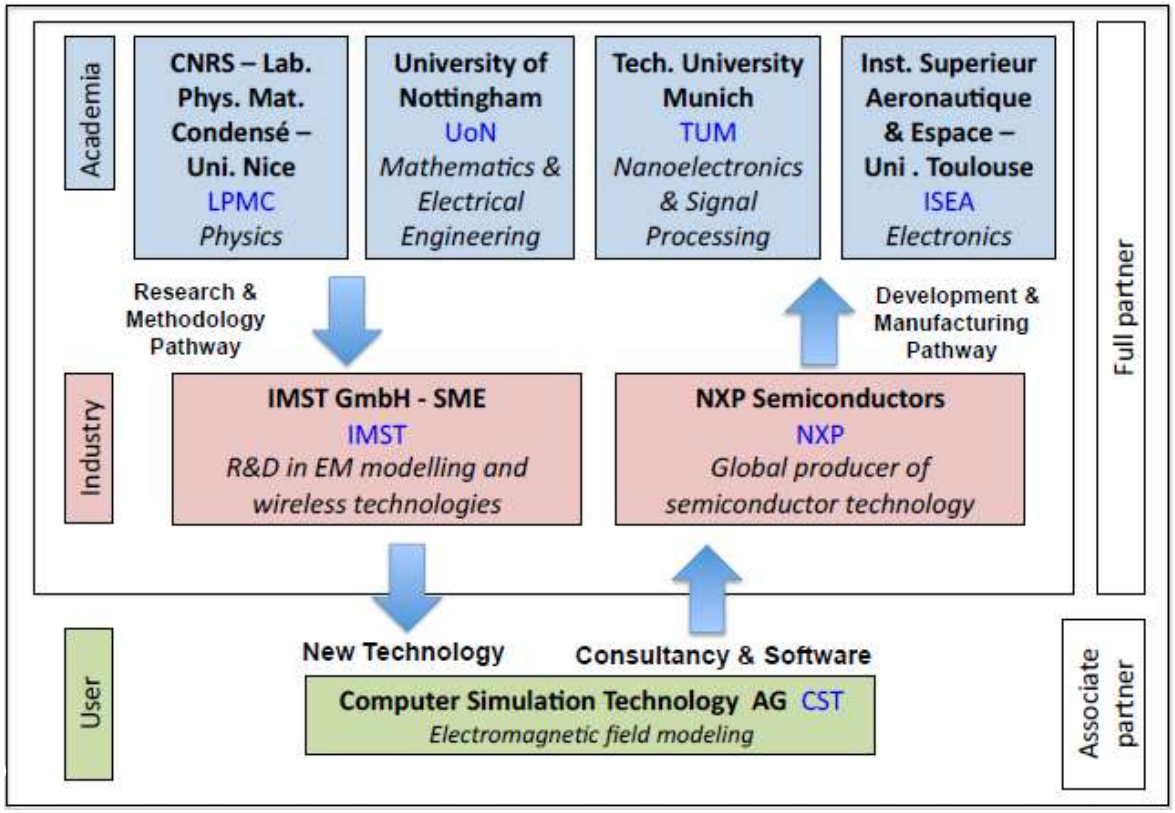
SECTION IMPLEMENTATION: COMMENTS (2)

- Methodology should allow for proper measures to be taken in case of partial failure(s)
- Proper timing of tasks, incl. enough time for feedback loop(s)
- Few milestones, few deliverables

  … but with sufficient content (2-4/year)
- Identify REAL risks + suggest contingency plans
- Task or WP on Exploitation, dissemination & communication?

© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION IMPLEMENTATION: EXAMPLE CONSORTIUM

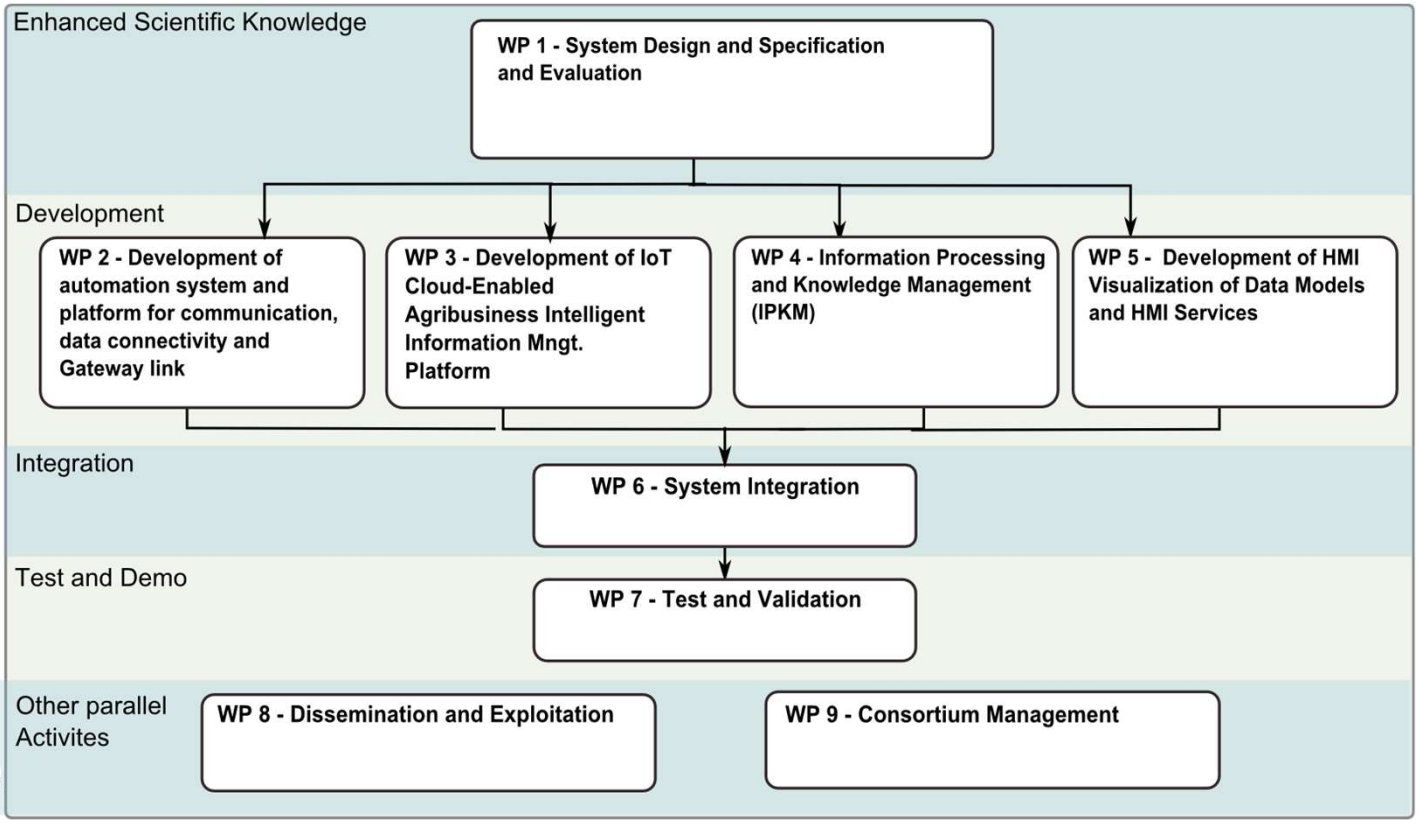


SECTION IMPLEMENTATION: EXAMPLE GANNT CHART

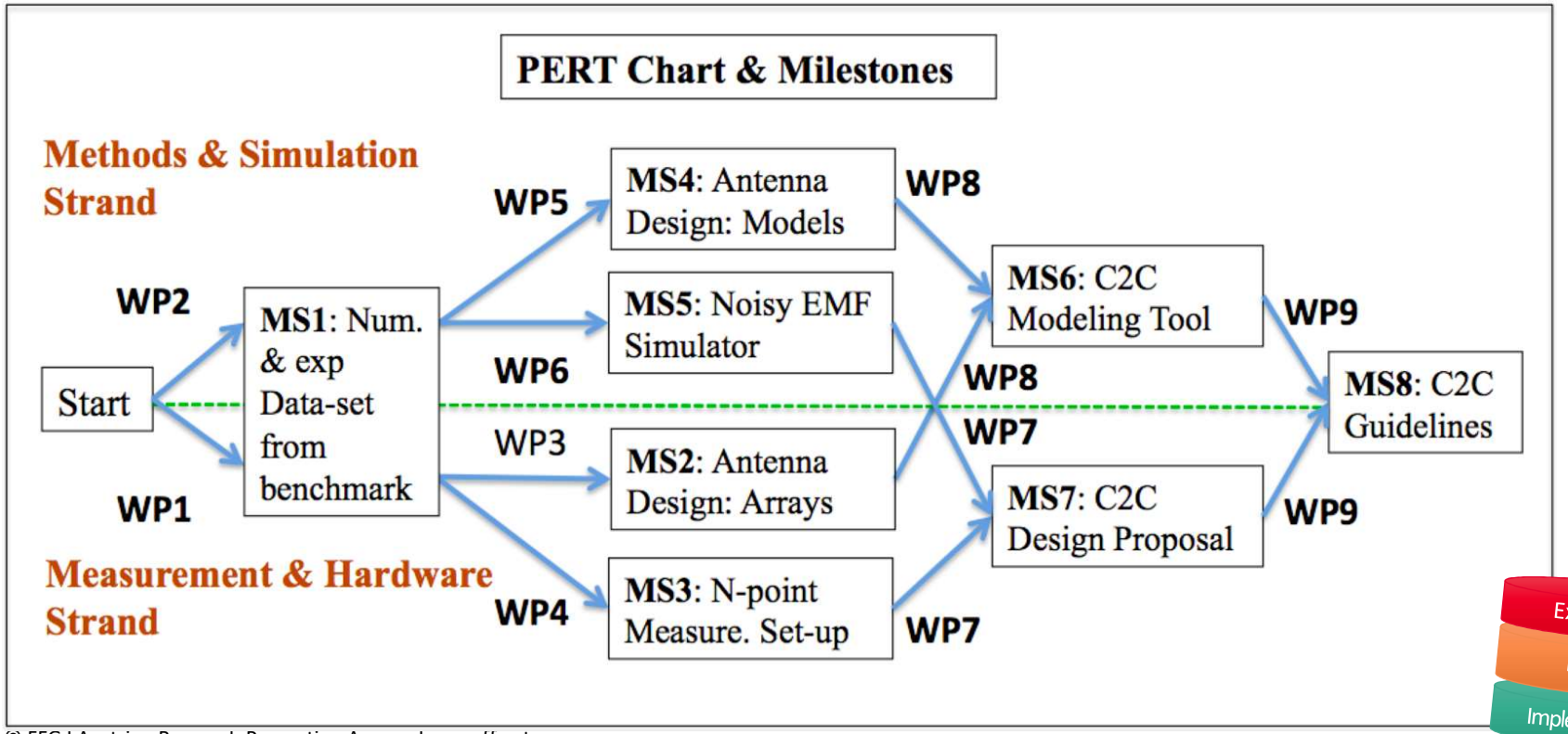
task		project month 3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48
WP1: Characterization of the ^{70}Ga transition		
Task 1.1 Energy measurement	UHEI	
Task 1.2 Detection of XUV sharing	KMU	
Task 1.3 Polyharmonic cross section	JYV	
Task 1.4 Internal conversion	FETI	
Task 1.5 Theory support: IC	MPK	
WP2: Foundations for a nuclear optical clock		
Task 2.1 EB, neutron ex., optical spec	PTB	
Task 2.2 Hyperine structure	PTB	
Task 2.3 Liquidized approach	FETI	
Task 2.4 Theory support: metrology	MPK	
WP3: Development of XUV detonators		
Task 3.1 Narrow cw tunable FHG detonator	TOP	
Task 3.2 Stationary XUV gravity coloumb	MPQ	
WP4: Preparation of samples		
Task 4.1 Frenium samples	FETI	
Task 4.2 Gallium samples	FETI	
WP5: Management		
Task 5.1 Administratneutron	FETI	
Task 5.2 Dissemination	FETI	
Task 5.3 Communication	FETI	

milestone deliverable meeting

SECTION IMPLEMENTATION:
EXAMPLE PERT CHART W/ TASKS



SECTION IMPLEMENTATION:
EXAMPLE MODIFIED PERT CHART W/ MILESTONES



© FFG I Austrian Research Promotion Agency I www.ffg.at

SECTION IMPLEMENTATION: CONSTRUCTION PERSON MONTHS

NAME	START	END	LEADER	TREE	DFKI	TECH	SCESE	ACCIONA	JOT	TRI	TOTAL
Project Management	**M1**	**M36**	**TREE**	**20**	**1**	**1**	**1**	2	2	7	**34**
Project management and coordination	M1	M36	TREE	18	1	1	1	1	1	1	24
Data management plan	M1	M36	TRI	1	0	0	0	1	1	3	6
Ethics protocol and monitoring	M1	M36	TRI	1	0	0	0	0	0	3	4
Specification of end users and technical requirements	**M1**	**M36**	**ACCIONA**	**10**	**3**	**3**	**3**	10	10	4	**43**
End-users requirements and dataset evaluation	M1	M12	ACCIONA	2	1	1	1	8	8	2	23
Technical requirements for each component	M1	M12	TREE	5	2	2	2	0	0	0	11
Analysis of industry-validated benchmarks. KPI's definition	M1	M12	JOT	2	0	0	0	1	1	0	4
Privacy impact assessment	M1	M12	TRI	1	0	0	0	1	1	2	5
Machine-Human-Process Intelligence	**M1**	**M36**	**DFKI**	**2**	**30**	**6**	**6**	2	2	0	**48**
Requirements for a robust design of Machine-Human-Process In	M1	M36	DFKI	0	10	2	2	1	1	0	16
Integrating the expert knowledge with machine learning for patter	M12	M36	DFKI	2	10	2	2	0	0	0	16
Business process intelligence for detecting complex event proces	M12	M36	DFKI	0	10	2	2	1	1	0	16
Uncertainty Management, Rule Induction & Validation	**M1**	**M36**	**TECH**	**2**	**6**	**36**	**6**	1	1	0	**52**
Event Uncertainty Management: Models and Algorithms	M1	M36	TECH	0	0	12	2	0	0	0	14
Investigation and design of algorithms for mining rules and even	M4	M36	TECH	0	3	12	2	0	0	0	17
Development of a feedback mechanism to validate rules	M4	M36	TECH	2	3	12	2	1	1	0	21
Visual query, analysis and interaction with complex events	**M1**	**M36**	**SCESSE**	**2**	**6**	**6**	**42**	2	2	0	**60**
Visual modeling of domain expert knowledge	M1	M36	SCESE	0	3	2	14	1	1	0	21
Visual interface for validation of detected event patterns	M4	M36	SCESE	2	3	2	14	0	0	0	21
Dashboard for system status and triggering of events	M4	M36	SCESE	0	0	2	14	1	1	0	18
Stack integration, portability and standardization	**M6**	**M36**	**TREE**	**36**	**6**	**6**	**6**	2	2	0	**58**
Standards and technologies for stack interoperability	M6	M24	TREE	4	0	0	0	0	0	0	4
Portability with big data processing engines definition	M6	M36	TREE	10	0	0	0	0	0	0	10
Portability components development	M19	M36	TREE	10	3	3	3	0	0	0	19
Software stack integration	M13	M36	TREE	12	3	3	3	2	2	0	25
Validation of pilots and demonstration	**M6**	**M36**	**JOT**	**7**	**0**	**0**	**0**	24	24	2	**57**
Experimental protocol methodology definition	M6	M12	JOT	2	0	0	0	3	3	1	9
Pilot implementation and setup - Phase I	M13	M24	JOT	1	0	0	0	6	6	0	13
Pilot validation of initial developments - Phase II	M19	M30	ACCIONA	2	0	0	0	6	6	0	14
Final validation and assessment - Phase III	M31	M36	JOT	2	0	0	0	9	9	1	21
Communication, exploitation and dissemination	**M1**	**M36**	**TRI**	**9**	**2**	**2**	**2**	5	5	7	**32**
Dissemination plan and website	M1	M36	TREE	2	0	0	0	1	1	2	6
Communication materials	M1	M36	TRI	1	0	0	0	1	1	2	5
Written material for scientific and technical audiences	M1	M36	TECH	1	1	1	1	0	0	0	4
Evaluation and impact assessment	M13	M36	DFKI	2	0	0	0	1	1	1	5
Exploitation strategy and business model	M25	M36	ACCIONA	2	1	1	1	2	2	1	10
Final event	M31	M36	TREE	1	0	0	0	0	0	1	2
				88	**54**	**60**	**66**	**48**	**48**	**20**	**384**

FFG
Promoting Innovation.

SECTION IMPLEMENTATION: CONSTRUCTION TOTAL BUDGET

PARTNER	TREE	DFKI	TECH	SCESE	ACCIONA	JOT	TRI	
COUNTRY	SPAIN	GERMANY	ISRAEL	SWEDEN	SPAIN	SPAIN	UK	
PM	88	54	60	66	48	48	20	384
PM-COST	5.000 €	6.800 €	4.100 €	4.500 €	4.500 €	6.000 €	6.500 €	
Direct perso	440.000 €	367.200 €	246.000 €	297.000 €	216.000 €	288.000 €	130.000 €	1.984.200 €
Travel costs	40.000 €	40.000 €	18.000 €	40.000 €	16.000 €	18.000 €	16.000 €	6 meetings, 6 disseminations, 1600 € /event
Equipment								
Other goods/se		4.000 €	4.000 €	3.000 €		13.000 €		Publications, conf.fees
3rd party (in-kind)								
CFS (direct costs > 325K€)	1.500 €	1.500 €	1.167 €	1.500 €		3.000 €		
Other direct costs	41.500 €	45.500 €	23.167 €	44.500 €	16.000 €	34.000 €	16.000 €	220.667 €
Subcontracting	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Direct cos financial ties	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Costs of in-kind contributions not used on the beneficiary's	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Indirect costs 0,25*(A+B-E)	120.375 €	103.175 €	67.292 €	85.375 €	58.000 €	80.500 €	36.500 €	551.217 €
Special unit costs covering	0 €	0 €	0 €	0 €	0 €	0 €	0 €	0 €
Total estimated elegible costs	601.875 €	515.875 €	336.459 €	426.875 €	290.000 €	402.500 €	182.500 €	2.756.084 €
Reimbusement rate	100%	100%	100%	100%	100%	100%	100%	
Max. EU Contribution (=H*I)	601.875 €	515.875 €	336.459 €	426.875 €	290.000 €	402.500 €	182.500 €	
Requested EU Contribution	601.875 €	515.875 €	336.459 €	426.875 €	290.000 €	402.500 €	182.500 €	2.756.084 €

Including costs for Advisory Board

Difficult to justify. Need to specify depreciation.

EC funds only, one audit.

Please maintain this below 15% of personnel

FFG
Promoting Innovation.

TEMPLATE STRUCTURE: SECTION CONSORTIUM

- This section is NOT part of the expert evaluation and is NOT covered by the page limit.
- HOWEVER, the information provided here will be used to judge the operational capacity [of project partners]!
- Participants (applicants), how their expertise and capacity match the tasks assigned, CVs of key personnel…*
- Evtl. third parties involved in the project (third party resources/contribution)

** In FET typically ~ 1-2 pages per partner*

© FFG I Austrian Research Promotion Agency I www.ffg.at

TEMPLATE STRUCTURE:
SECTION ETHICS AND SECURITY

- This section is NOT part of the expert evaluation and is NOT covered by the page limit.
- Ethics: to be filled in ONLY if the ethical issues in Part A flagged

  Collecting user requirements ~ working with private data
  => has to be flagged/addressed

- Evtl. security issues, classified info

© FFG I Austrian Research Promotion Agency I www.ffg.at

TABLE OF CONTENT

1. FET Proactive general rules & considerations
2. Call 2020
3. Inspiration from/by the past
4. Proposal Preparation
5. Tips&trics & Usefull links

© FFG I Austrian Research Promotion Agency I www.ffg.at

FET PROACTIVE: GENERAL & WRITING SUGGESTIONS

- Select a catchy acronym ☺
- Follow the template structure!
- You write for experts, not for the EC = mixture of experts and generalists: be factual, no superficial phrases
- Use graphics/figures, make sure you are well understood!
- „Summary box“ is a useful tool, despite the space restrictions
- Include also Education, Training and Public outreach in your work plan
- Consortium representative of your community
- *If meaningful*, devote certain project budget to an SME (high potential actor)
- Submit a concise and consistent proposal on time: 2 July / 17 June 2020 17:00

© FFG I Austrian Research Promotion Agency I www.ffg.at

FET PROACTIVE: USEFUL LINKS

- FET Proactive official website: https://ec.europa.eu/programmes/horizon2020/en/h2020-section/fet-proactive
- FET Proactive Call: https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-search;programCode=H2020;callCode=H2020-FETPROACT-2018-2020
- FET Proactive self-evaluation form: http://ec.europa.eu/research/participants/data/ref/h2020/other/call_ptef/ef/h2020-call-ef-fetproact-ria-01-2018_en.pdf
- H2020 FAQ: https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/faq;programme=H2020
- H2020 project abstracts: http://cordis.europa.eu/projects
- FET-Proactive project A-LEAF (outcomes): http://www.a-leaf.eu/outcomes
- Project PARTIAL-PGMs (deliverables): http://www.partial-pgms.eu/download

© FFG I Austrian Research Promotion Agency I www.ffg.at

GUIDES EXPLOITATION, DISSEMINATION, COMMUNICATION

- Exploitation & Dissemination Guide: http://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/grant-management/dissemination-of-results_en.htm
- Communication Guide: http://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/grant-management/communication_en.htm
- Guidelines Communicating EU research and innovation: http://ec.europa.eu/research/participants/data/ref/h2020/other/gm/h2020-guide-comm_en.pdf

© FFG I Austrian Research Promotion Agency I www.ffg.at

ETHICS

- Guidelines on Ethics: http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/h2020_hi_ethics-self-assess_en.pdf
- Privacy & Data Protection: http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/h2020_hi_ethics-data-protection_en.pdf

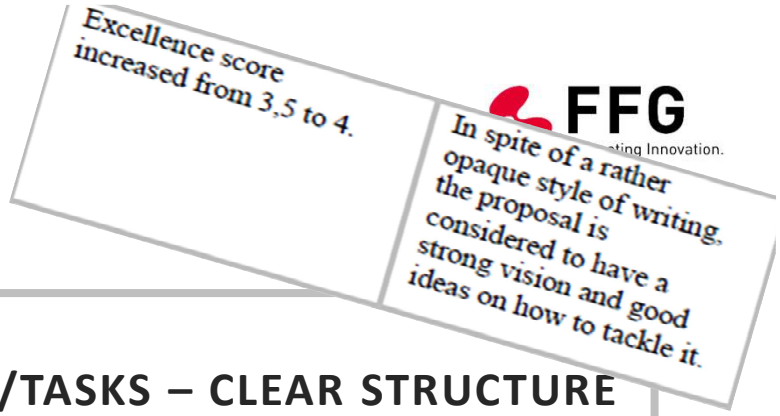
© FFG I Austrian Research Promotion Agency I www.ffg.at

GUIDES OPEN ACCESS TO SCI. PUBLICATIONS & RESEARCH DATA

- Open Access Guide
  http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/open-access_en.htm
- Guidelines on Open Access to Scientific Publications and Research Data in H2020:
  http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf
- Data Management Guide
  http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/data-management_en.htm
- Guidelines on FAIR Data Management in H2020
  http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf
- UK Data Management Tool, https://dmponline.dcc.ac.uk

© FFG I Austrian Research Promotion Agency I www.ffg.at

TAKE-HOME MESSAGE



CLEAR <u>OBJECTIVES</u> – CLEAR WORK PROGRAM/TASKS – CLEAR STRUCTURE

FOR EXPERTS <–> FOR GENERALISTS

3-minutes rule: the first 1-2 pages must clearly bring across the message: ***What*** *do you want to do?* ***Why*** *you, why now?*

- Submit your draft proposal to FFG for pre-proposal check: david.kolman@ffg.at
- If you need more info or a proposal example, let me know too

© FFG I Austrian Research Promotion Agency I www.ffg.at

THANK YOU FOR YOUR ATTENTION

David Kolman
National Contact Point
Future and Emerging Technologies

Austrian Research Promotion Agency
Sensengasse 1, A-1090 Vienna

T +43 (0) 5 7755 4208
david.kolman@ffg.at
www.ffg.at