H2020 strategy for LSST proposals/projects

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Few words of caution

- I am not an expert on writing proposals nor on EU funding
- It takes lot of effort to write good proposal
- Success rate relatively small
- There are some agencies who professionally write proposals
- There are some Universities who have their offices in Brussels doing anything you need for the success of proposals (from lobbying, finding you the calls to writing proposals)
- I do not cover regional programs...
General points in strategy

- Strength of LSST as instrument/survey/science
- European involvement – possibility of widening
- Educational potential for new generation of scientist/experts
- DAC's and extreme data
- Smaller countries (few PI's) and their needs
- Networking!!!
- Support PI bids to ERC
- Influence in industry...
COST

- We heard from Dejan about COST and BSE
- lsst@europe Should be one proposal for COST action especially in the next few years – maybe not to overlap with BSE, but aim as kind of continuation…
- Good tool for smaller countries to get involved
H2020

- 80 B Euro EU Commission flagship program for Research and innovation
- MSCA
  - ITN
  - RISE
  - COFUND
- LEIT
- SPACE
- ICT
- FET
- INFRASTRUCTURE

Mainly 2017 calls but LOOK AHEAD toward 2018-2020
MSCA

- Maria Sklodowska-Curie Actions
  - ITN – Innovative Training Network
    - 10 Jan 2017 budget 430M
  - IF – not for us
  - RISE – Research and Innovation Staff Exchange
    - 05 April 2017 80M
  - COFUND of regional national and international programmes
    - 28 Sep 2017 80M
MSCA ITN

- 10 Jan 2017 budget 430M (indicative of future)

Objective: The Innovative Training Networks (ITN) aim to train a new generation of creative, entrepreneurial and innovative early-stage researchers, able to face current and future challenges and to convert knowledge and ideas into products and services for economic and social benefit.

ITN will raise excellence and structure research and doctoral training, extending the traditional academic research training setting, incorporating the elements of Open Science and equipping researchers with the right combination of research-related and transferable competences. It will provide enhanced career perspectives in both the academic and non-academic sectors through international, interdisciplinary and intersectoral mobility combined with an innovation-oriented mind-set.
MSCA ITN

- Three types of training networks
  - European Training Network (my favorite) 370M
  - European Industrial Doctorates 28M
  - European Joint Doctorates 32M

Nic: Aim for the Jan 2019 call MCSA ETN call >>>
Implies PhD projects start Oct 2020, end Sep 2024 – so at that stage Commissioning Camera data will be available from late 2019, and DR1 data will be released Oct 2023. Hence projects cover real LSST data. (Could go for the Jan 2018 call but more risk on non-availability of data).

Train 15 PhD students across LSST@Europe institutes
Matches the LSST Data Science Fellowship programme
Main Impact - research level

- Increased set of skills, both research-related and transferable ones, leading to improved employability and career prospects both in and outside academia (leading in the longer-term to more successful careers)
- Increase, in the longer-term, in higher impact R&I output, more knowledge and ideas converted into products and services
- Greater contribution, in the longer term, to the knowledge-based economy and society

Main Impact - organization level

- Enhanced cooperation and better transfer of knowledge between sectors and disciplines
- Improvement in the quality of training programmes
- Creation of new networks and enhanced quality of existing ones
- Boosting R&I capacity among participating organisations
- Increased internationalization of participating organisations
Main Impact – system level

- Increase in international, interdisciplinary and intersectoral mobility of researchers in Europe
- More structured and innovative doctoral training, enhanced implementation of the European Charter and Code and the EU Principles for Innovative Doctoral Training
- Stronger links between the European Research Area (ERA) and the European Higher Education Area (EHEA), notably through supporting the knowledge triangle between research, innovation and education
- Improvement in the working and employment conditions for doctoral candidates in Europe
- Increased societal and economic relevance of European higher education
- Strengthening Europe's human capital base in R&I with a new generation of more entrepreneurial and highly-skilled early career researchers
- Increase in Europe's attractiveness as a leading research destination, accompanied by a rise in the numbers of talented researchers retained and attracted from abroad
- Better quality research and innovation contributing to Europe's competitiveness and growth
Objective: The RISE scheme will promote international and inter-sector collaboration through research and innovation staff exchanges, and sharing of knowledge and ideas from research to market (and vice-versa). The scheme fosters a shared culture of research and innovation that welcomes and rewards creativity and entrepreneurship and helps to turn creative ideas into innovative products, services or processes.

Scope: RISE involves organisations from the academic and non-academic sectors (in particular SMEs), based in Europe (EU Member States and Associated Countries) and outside Europe (third countries).

Support is provided for the development of partnerships in the form of a joint research and innovation project. This is aimed at knowledge sharing via international as well as intersectoral mobility, based on secondments of research and innovation staff (exchanges) with an in-built return mechanism.
MSCA COFUND

- COFUND – Co-funding of regional, national and international programmes
  - 05 April 2017 80M
  - Objective: The COFUND scheme aims to stimulate regional, national or international programmes to foster excellence in researchers' training, mobility and career development, spreading the best practices of Marie Skłodowska-Curie actions. This will be achieved by co-funding new or existing regional, national, and international programmes to open up to, and provide for, international, intersectoral and interdisciplinary research training, as well as transnational and cross-sectoral mobility of researchers at all stages of their career.
  - Scope: Each proposal funded under the COFUND scheme shall have a sole beneficiary that will be responsible for the availability of the necessary matching funds to execute the proposal.
MSCA COFUND

- COFUND – two schemes
  - Doctoral programs 30M
  - Fellowship programs 50M
LEIT

- Leadership in enabling and industrial technologies
- Key Enabling Technologies (KETS)
  - micro-and nano-electronics, nanotechnologies, advanced materials, advanced manufacturing and processing, biotechnology and photonics, enabling innovation in all key industrial sectors. Advanced manufacturing in particular is considered as a cross-cutting issue, underpinning innovation.
- ICT
- Space?
LEIT-ICT

- WP 130+ pages of calls
- ICT 39 calls
- Ground-breaking Horizon Prize on Big Data Technologies 2017
LEIT-ICT

- ICT-14-2016-2017: Big Data PPP: cross-sectorial and cross-lingual data integration and Experimentation
- ICT-16-2017: Big data PPP: research addressing main technology challenges of the data Economy
- ICT-17-2016-2017: Big data PPP: Support, industrial skills, benchmarking and evaluation
- ICT-18-2016: Big data PPP: privacy-preserving big data technologies
Future and Emerging Technologies activities help to create in Europe a fertile ground for responsible and dynamic multi-disciplinary collaborations on future and emerging technologies and for kick-starting new European research and innovation eco-systems around them. These will be the seeds for future industrial leadership and for tackling society’s grand challenges in new ways.

FET focuses on research beyond what is known, accepted or widely adopted and supports novel and visionary thinking to open promising paths towards radically new technological possibilities. In particular, FET funds interdisciplinary collaborations that seek genuine cross-fertilisation and deep synergies between the broadest range of advanced sciences (including the life sciences, social sciences and humanities) and cutting-edge engineering disciplines.
FET

- FET has three main lines of activity:
  - FET Open supports the early-stages of the science and technology research and innovation around new ideas towards radically new future technologies. It also funds coordination and support activities for such high-risk forward looking research to prosper in Europe.
  - FET Proactive addresses promising directions for research on future technologies in order to build up a European critical mass of knowledge and excellence around them.
  - FET Flagships are science-driven, large-scale, multidisciplinary research initiatives oriented towards a unifying goal, aiming at transformational impacts with substantial benefits for European competitiveness and for society.
FET

- FETHPC three calls:
  - FETHPC-01-2016: Co-design of HPC systems and applications 27 Sep 2016 41M
  - FETHPC-02-2017: Transition to Exascale Computing 26 Sep 2017 40M
  - FETHPC-03-2017: Exascale HPC ecosystem development 26 Sep 2017 4M (CSA)
FET

FETHPC-02-2017: Transition to Exascale Computing
- High productivity programming environments for exascale
- Exascale system software and management
- Exascale I/O and storage in the presence of multiple tiers of data storage
- Supercomputing for Extreme Data and emerging HPC use modes
- Mathematics and algorithms for extreme scale HPC systems and applications working with extreme data
INFRASTRUCTURES

- Including e-infrastructures
- INFRADEV-04-2016 (deadline was yesterday) European Open Science Cloud for Research expect similar calls
- INFRAIA (too late for this cycle) starting community – but should be available in 2018/2019 – maybe lobbying with some national representatives
INFRASTRUCTURES

- EINFRA21-2016 20Sep 26M Research and Innovation Actions for e-Infrastructure prototypes:
  - Universal discoverability of data objects and provenance
  - Computing e-infrastructure with extreme large datasets
INFRASTRUCTURES

EINFRA12-2017 29Mar 26M Data and Distributed Computing e-infrastructures for Open Science

This topic covers two complementary areas of e-infrastructures very closely related with the objective to make research data discoverable, accessible, assessable, intelligible, useable, and wherever possible interoperable.
INFRASTRUCTURES

- Including e-infrastructures
- EINFRA21-2017 20Sep 26M Platform driven e-infrastructure innovation
- Research and Innovation Actions for
  - Universal discoverability of data objects and provenance
  - Computing e-infrastructure with extreme large datasets
Look ahead

- Timeline for space (similar to others)
- Position papers due on April 22!!!

2016
- Stakeholder consultation/Advisory groups (Q1/Q2)
- Consultation of Member States (Q2/Q3)
- Strategic Programming Document (Q3)
- Start of drafting of WPs (Q4)

2017
- Consultation PC configurations on WPs drafts (Q1-Q3)
- Adoption of the WP 2018-20 (Q4) (should incorporate the results of the Horizon 2020 Interim evaluation)

2018
- Adoption of financing decision for 2019 (Q2)

2019
- Adoption of financing decision for 2020 (Q2)
Conclusion

- There is plenty of funding opportunities
- We should concentrate on few we feel the best (strongest) about

Hope this summary helps!