OPTICON in H2020
The case; what to do?

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What has been done in 2014

- 10 March: RG and WB visited MPG lobbyists in Brussels to learn “how to lobby in EC domain”
- 8 May: meeting at INAF in Rome to lay the foundation for OPTICON in H2020. The baseline:
  - The European astronomical community and ESO must work together to make the E-ELT a scientific success
  - Frontline Op-IR astronomical research requires a broad range of telescopes, each equipped with advanced instruments exploiting latest technology and data reduction tools
  - Training the next generation European astronomers
More ...

• 3 June: visit to EC Research Infrastructures RI): meeting with deputy DG Philippe Froissard; for OPTICON present GG, GP and WB
• Aug-Sept: many of us spoke with national delegate in Steering Committee for Research Infrastructures
• Nov-Dec: Steering Committee and EC Directorate RI will identify topics for calls in H2020-INFRAIA for 2016-2017 round
• This meeting
Lessons learned

• Lobbying is essential

• OPTICON still have strong support with EC Research Infrastructures. However landscape is changing:
  – The case must be written in innovative way
  – Just I3 (networking, access, technical R&D) is not enough any more. Program must include (1) benefit for society, and (2) collaboration with industry (knowledge transfer)
  – Think of new approaches, like
    • OPTICON as the main train; separate fund raising for specific activities: for instance “R&D for future instrumentation in collaboration with industry”, for training, broadening participants
      – Plan in advance: lobby at EC and national scales are essential to assure that the right call get out with the right criteria
      – Invest in person who guides and supports OPTICON to find the right call for proposals and helps in writing proposals (for (sub) projects)
Lessons learned -2

• Initial OPTICON technical R&D program also provided the baseline for follow-up funding from other/national funding schemes

• Major technology now in use in Op-IR instrumentation is developed under OPTICON initiatives (need to be put together in one figure/table)

• More is written up in document written by GG distributed for this meeting
Lessons learned -2

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• **Better to continue hanging together than to compete with each other and be hanged separately**
The case

- In astronomy many new discoveries happened through observations exploiting new capabilities
  - most recent US National Academy Decadal review noting that “Europe is on-track to become the undisputed leader in ground-based optical-IR astronomy”
  - Keeping lead position is more difficult than getting to top
  - The European strong points: working together in ESO, OPTICON and AstroNet: the coordinated approach
    - ESO: world-leading facilities
    - AstroNet: European strategic plan for astronomy
    - OPTICON: integrated approach thru (1) networking, (2) access to facilities, and (3) technology development
Why Continuation OPTICON?

• Key deliveries in the past
  – Created the “united” approach to E-ELT
  – Combined staff effort to mature new technology to make E-ELT possible at an affordable price
    • Adaptive optics
    • Deformable mirrors
    • Fast detector systems
    • Database technology
    • Coordinated approach to instrument development
  – Access to telescope facilities
    • Need for 1-2 one-liners to summarize the importance
Find added value

• Further strengthen European collaboration in astronomy to work with ESO making E-ELT a success
  – Networking: meetings to discuss technical challengers and options for solutions
  – Technical R&D and software tools for next generation astronomical instruments
  – Any additional community work related to E-ELT?
  – Non ELT related activities?

• Do we want to set limitations?
  – In wavelength range: optical – near IR?
  – More?
  – Synergy: groundbased-space
For discussion

– Focus on E-ELT or a broader mindset?

• Additional 8m, 2-4m and dedicated 1m class telescope are needed as well to serve the community (> 3000 people)
  – There telescopes require a joint strategy and dedicated instruments in order to remain at front-line research
  – What do we learn from interactions with other I3 programs (RadioNet, CTA, Astroparticles, ...)

• Is strategy for Astronomy in Europe developed by AstroNet still up to date?
  – YES, there is an update under review
  – Does this update include the case for OPTICON in H2020?

• Need for optimization of work between OPTICON and the national funding agencies?
  – For some countries the OPTICON partner is the national funding agency; for other countries not. From the past this does not seem a problem. Isn’t it?
For today

• Proposal: create a small working group to prepare a discussion document including
  – Top-level scientific/technical case
  – Balance between Networking, Access and Technical R&D
  – How to involve industry?
  – Strategy for sub-programs under the OPTICON umbrella but funded from other resources

• Timeline
  – WG delivers its discussion paper end July 2015
  – Meeting to discuss OPTICON strategy in Oct 2015

• Invitation for all OPTICON partners to provide input for discussion in WG before 15 March 2015
  – Keep is short; top-level only
OPTICON strategy for H2020

- Top level summary of 2-3 pages; end with names of organizations that endorse the case; add OPTICON partner list in appendix
- Write the case; focus on ELT and in parallel preparing smaller telescopes for use in new era including R&D for their special purpose / survey instruments
- Summary of success in the past: for astronomy and as well spin-off to industry
- Top level ideas on Technical R&D, Networks, Trans-National access, Training, new ideas
- Paragraph expressing that ESO as E-ELT owner welcomes this initiative
- Argue that TNA in the future will be structuring access and co-use of large databases obtained from survey programs, rather than individual visits to telescopes: work effort is training on use of the survey data (via visits to groups who work intensively with these data) and developing pipeline software for additional applications of the data
- Create a expert poll and provide partial funding to cover costs to allow community experts to work with ESO in making the E-ELT a scientific success (working within the ESO management structure)
Preparation of R&D program

• Full bottom up process will likely lead to far too many proposals
• Just top-down is also not appreciated
• What are important criteria?
  – Prospects for use in future Op-IR astronomical instrumentation
    \textit{(priority on E-ELT, or not?)}
  – At least involvement of multiple (x=3?) OPTICON partners
  – In kind financial/staff contribution from participants?
  – Collaboration with industry?
  – Involvement of minor OPTICON partners?
• How to prepare the short list of topics?
• OPTICON funding pre-allocation to enforce realistic proposals?
• Usual criteria: science case, technical case, feasibility to reach goals?
Networking

• Widening transnational access and strengthen training
• Technology roadmap (with industry involvement)
• 3-5 networks on advancing the community
  – Time domain astronomy
  – Characterization exoplanets
  – Multi-disciplinary exchange with SKA, CTA, ....
• Community meeting on preparing for ELT era (in collaboration with other related I3s and potential interested communities, for example astroparticles)
• Exchange program to encourage people from starting communities to gain experience through 3-5 (up to 12?) months visits to institutes at their interest
• Some public outreach coordination and events?
Trans-national access

• With focus on use of existing databases instead of telescope observing time?

• The future NTA program need to structure the way how less developed communities will participate in the large survey programs