

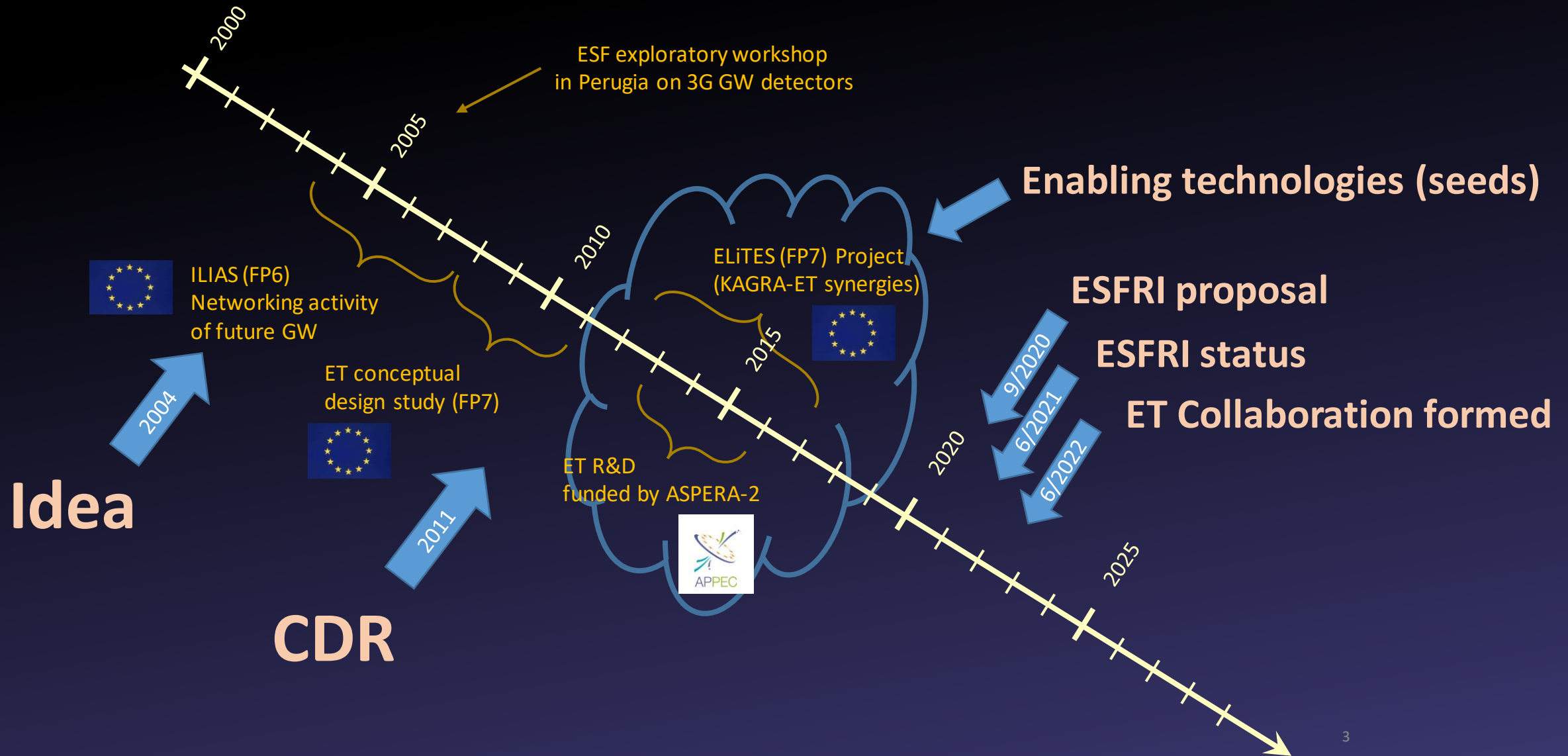
The title 'Team Candidature talk' is displayed in a large, white, sans-serif font, centered on the slide. It is overlaid on a background that includes a 3D cutaway of the Einstein Telescope's underground structure and a cosmic scene with a galaxy merger.

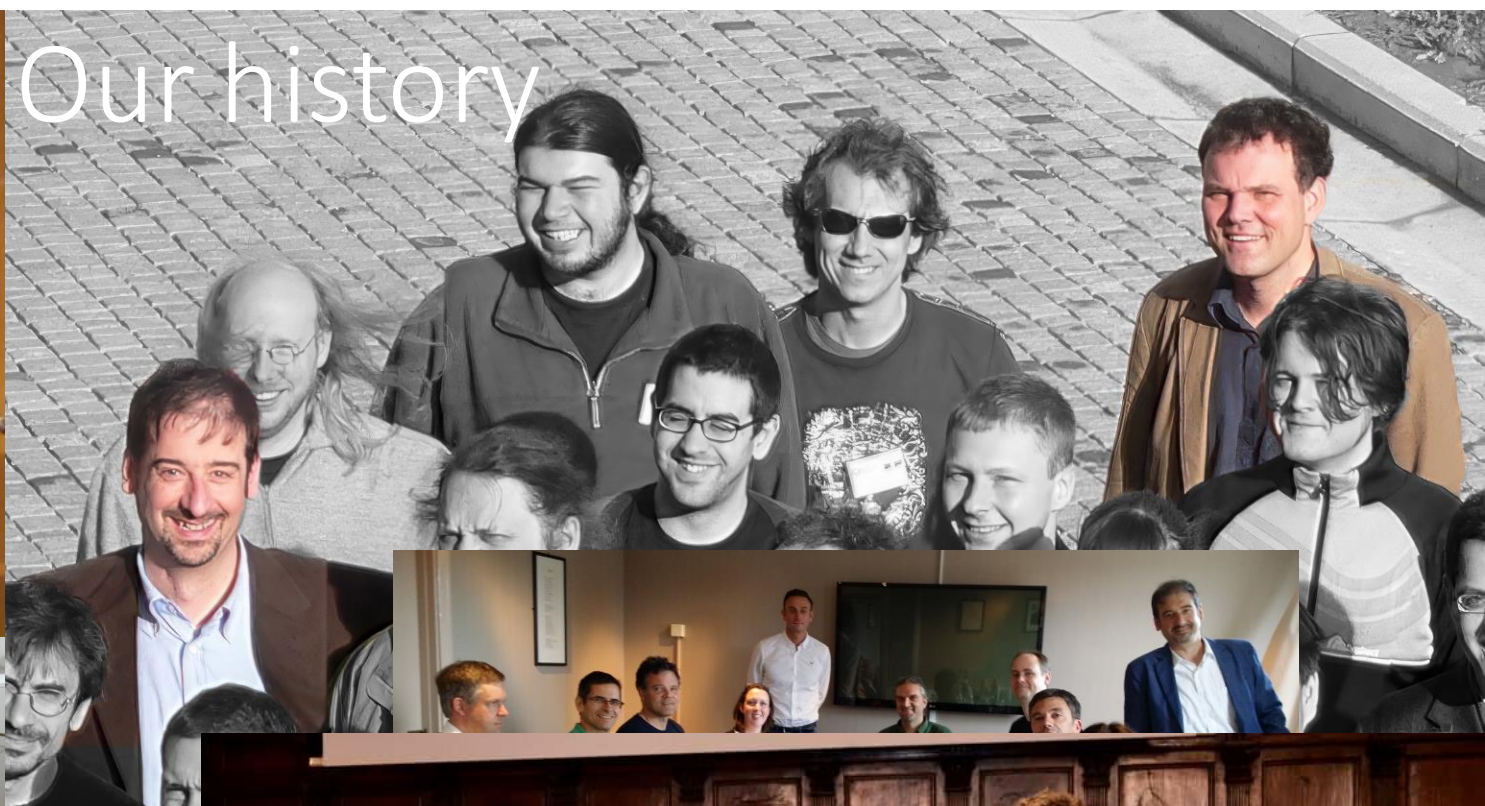
Team Candidature talk

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ET: a long path





**International Workshop
LIGO-VIRGO-3G Detectors W**
Perugia, 14-16 February 2019

- *ET Design:*
 - *Bring ET design from the **conceptual** to the **executive level***
 - *Tight cooperation between the Collaboration, the Project Office and the Engineering Department*
 - *From the Product Breakdown Structure to the WBS and OBS*
 - *Keep the collaboration with all its competences in a central role*
- The ET conceptual design was realized in 2011 and was partly updated in 2020, on occasion of the ESFRI submission
 - Certainly it is a beautiful work, but it is incomplete and the framework has evolved a lot since then:
 1. The detections
 2. Some technologies that were still a challenge in 2011 are now routine reality (squeezing)
 3. Low frequency sensitivity proved to be more challenging than expected
 4. Cosmic Explorer...
 - We need to complete the 2011-CDR and approach the executive design with rigorous engineering methods
 - **Challenge:** find the right balance between the roles of the Collaboration and of the “ET Organization”

- *R&D:*
 - *Some ET enabling technologies are still uncertain. We need a coordinated effort to:*
 - *Realise a complete prioritised list of ALL R&D tasks, starting from the ET enabling technologies*
 - *Define of a roadmap for all R&D tasks*
 - *Define a clear assignment process for R&D responsibilities*
 - *Attract new knowledge and skills from neighbouring research communities*
- Currently, we have national funds for R&D in some countries
 - The “common funds” for R&D are currently limited to the vacuum research (allocated to CERN)
 - We need to fund **all** R&D. It is essential to define a **scenario of the needed R&D activities needed**, their **priorities and a roadmap**, in order to present a coherent plan to the agencies
in support of the requests from the national teams.
 - Knowing “what we need to do” is a pre-requisite for attracting new groups

- *ET Implementation roadmap:*
 - *Science targets for the initial phase of ET must be well-defined and prioritized*
 - *We intend to present an implementation plan for ET integration and bootstrapping*
 - *What about an evolution line of ET?*
- The experiences of Virgo and LIGO tell us that it is a **long path to reach nominal sensitivity**
 - We need to prioritize the **science targets** and the **sensitivity improvements** in order to find a good evolution path to design sensitivity
 - ET, both in the triangle and in the 2L configurations, is a complex machine
 - We must start to develop an integration plan and a bootstrapping plan
 - Not all the scientific, technological and performance targets will be achieved at first switch-on and the ET facility will last for decades:
 - What is the evolution line of ET? Long lead times --> We need to think about this now.

(in synergy with the CB)

- *Define regular occasions of dissemination, networking and discussion*
 - *In particular, the **ET symposium** must be the **reference event** for all aspects related to future GW observatories.*
We will strive to reach a high level of maturity and organization for this event
- *Setting-up a clear **responsibility tree** inside the operative bodies of the Collaboration*
- *Establish a procedure for the exchange of positions of responsibility*
- *Align the evolution of Specific Boards to new phases of ET*
 - *preparation phase*
 - *construction phase*
 - *installation and commissioning phases*

- *For an efficient and well-organised progress of the entire ET endeavor, a well-organised cooperation between the ET collaboration and the ET organisation is imperative*
 - Things aren't so bad, but we need to improve
 - We need to achieve a regular and comprehensive exchange of information and a clear definition and agreement on responsibilities
- The ET Collaboration must be more flexible and faster than the ET Organization
 - Attract new scientists and new groups outside Europe

... we wish to create a **collaborative environment** that is **welcoming, inclusive and inspiring**, also and especially for young researchers, and to foster an **atmosphere of cooperation and teamwork** across institutions and countries.

We will

- set up welcome and instruction pages in the ET documentation and online pages
- promote the careers of young researchers by trying to support them with European tools such as training networks (we already successfully did it with the GraWIToN project)

We aim to foster exchanges with neighbouring scientific communities (astronomers, astrophysicists, cosmologists, nuclear physicists, etc.) to strengthen transversal scientific goals (EM follow-up)