
GNSS education experience in Italy



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COPUOS meeting – Vienna, June 11, 2012

The GNSS challenge

- It is well known that Global Navigation Satellite System represent one of the main topics for R&D worldwide
- Modernisation of **GPS** and **GLONASS**, development of **Galileo** and **Beidou** as well several regional systems are taking place
- It's a global process that involves industry and research institutions and it will enable applications with a relevant impact on the life of citizens



The GNSS challenge

- The “Education, Research and Innovation in GNSS – ERIG – “ project funded by the GNSS agency of the EC, showed how in Europe there is a lack of education and training in this field
- Solid education is the baseline for innovation development
- In Italy since 2004, Politecnico di Torino put great attention to the training of highly specialized technicians
 - Civil use of GNSS
 - System engineers
 - Application developers



Specializing Master on Navigation

The Master on Navigation and Related Applications aims to train specialists and technicians able to operate in GNSS both at core system and services level.

A joint initiative of Politecnico di Torino and ISMB, with the support of INRIM and the UN-Office for Outer Space Affairs.



UN-OOSA

“Istituto Superiore Mario Boella (**ISMB**) and **Politecnico** di Torino of Italy have established a long term **fellowship programme** which will provide scientists and specialists from **developing countries** with an opportunity to receive a **Master degree** in Navigation and related applications.”

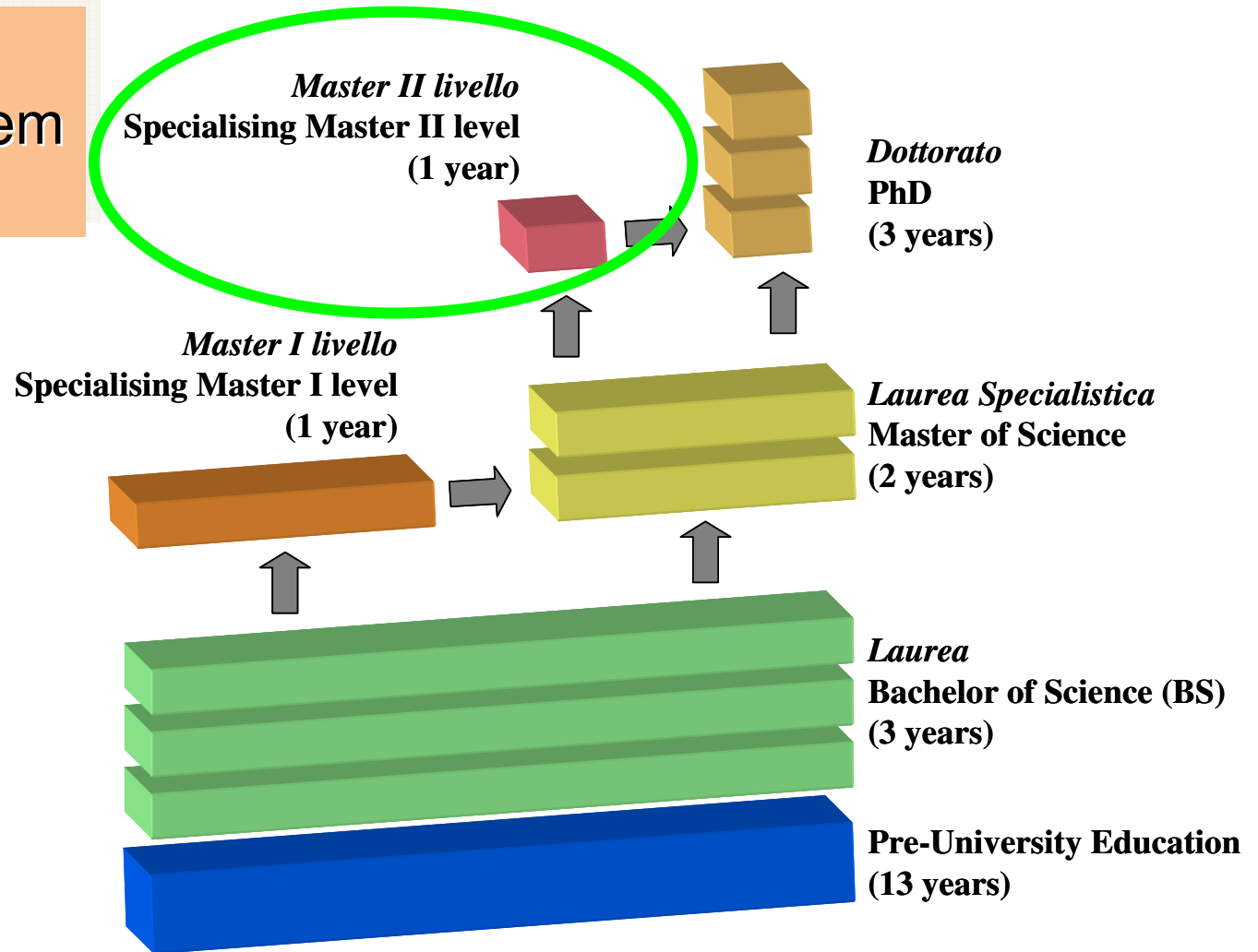
United Nations Vienna, June 2004



COPUOS meeting – Vienna, June 11, 2012

Structure of Education in Italy

The Italian University system after 1999

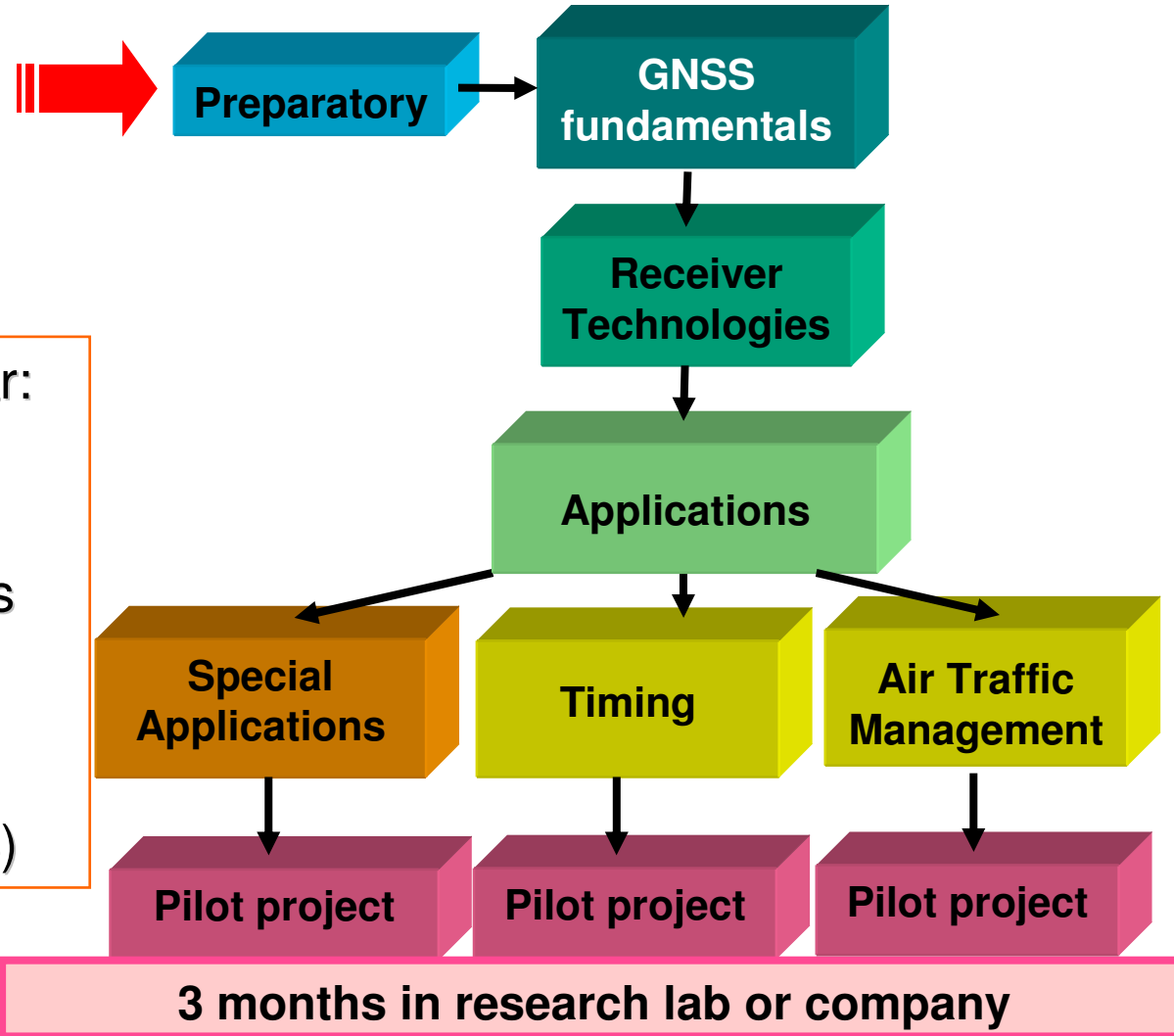


Overview of the Spec. Master program

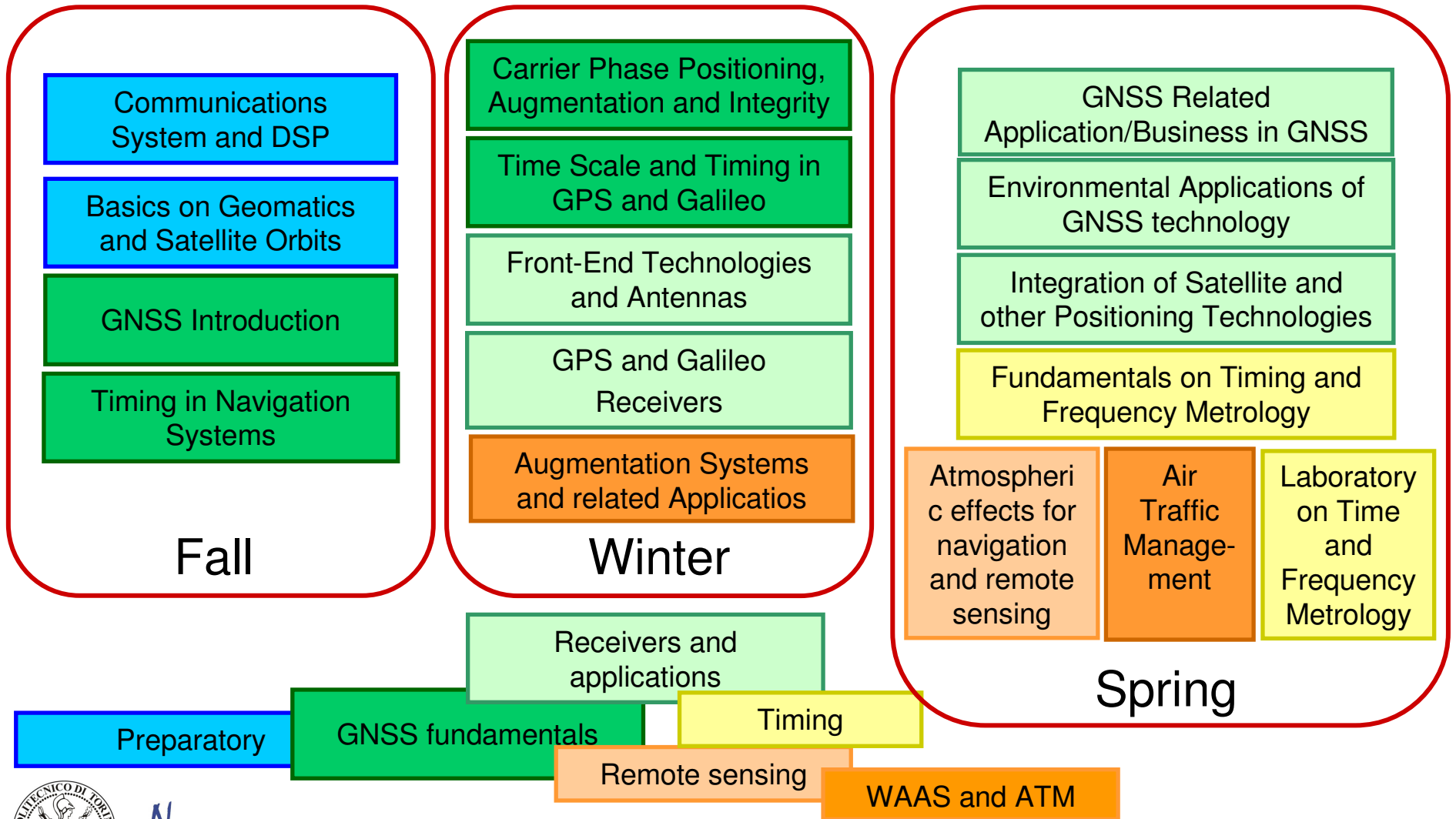


The Master lasts 1 year:

- Classes over **3 quarters** (50 ECTS)
- The fourth quarter is devoted to **an internship** to be carried out in a company (20 ECTS)



MNRA Syllabus



Details on UN/Italy Fellowship

The agreement among Politecnico di Torino, ISMB and UN-OOSA covers the following aspects:

Master Organization

The Masters programme has been organised with the co-operation of officers of UN-OOSA

Contribution to the Master Curriculum definition

The program of the courses has been prepared by the Masters Scientific Committee and discussed with the UN-OOSA representatives

Master Promotion

The Masters and the Fellowship initiatives are promoted through the UN web site and in all the UN Educational Centres in the world



Details on UN/Italy Fellowship

The agreement among Politecnico di Torino, ISMB and UN-OOSA covers the following aspects:

Student Selection

4-5 students are selected yearly by UN through the UN Regional Educational Centres

Financial Support

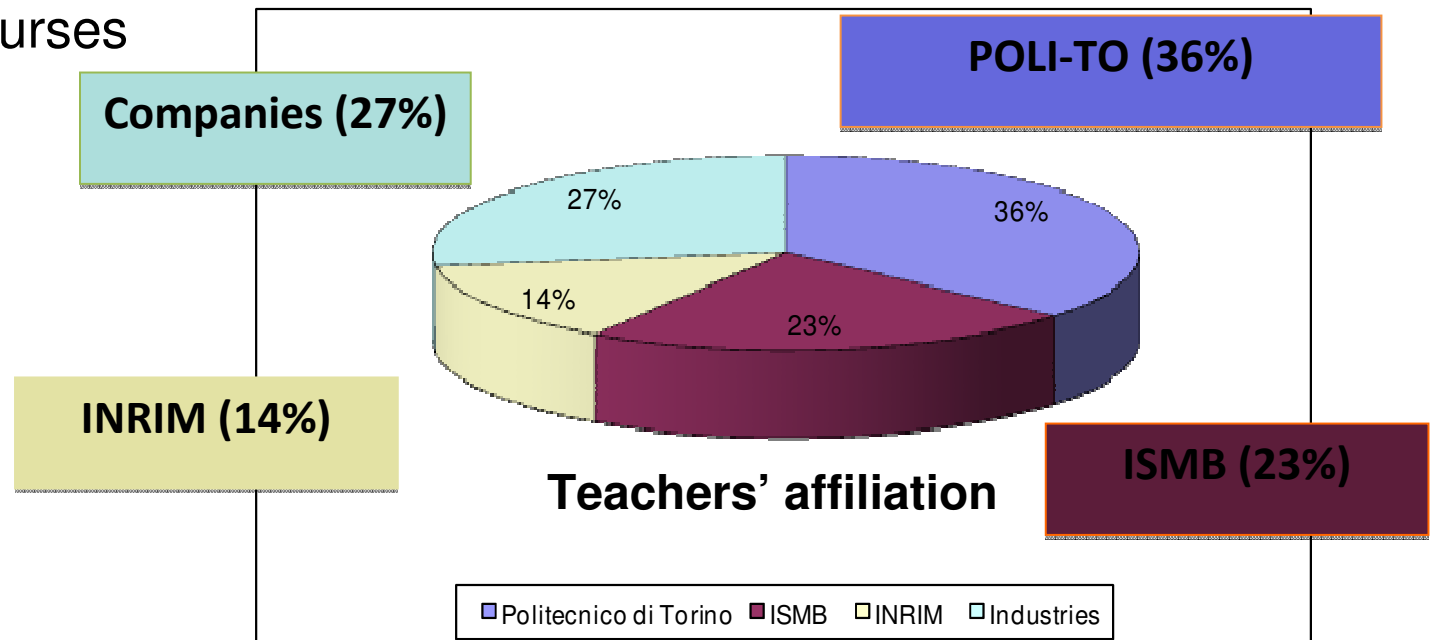
The students that are selected by UN receive a scholarship by ISMB to attend the Master



The Academia/Industry Cooperation

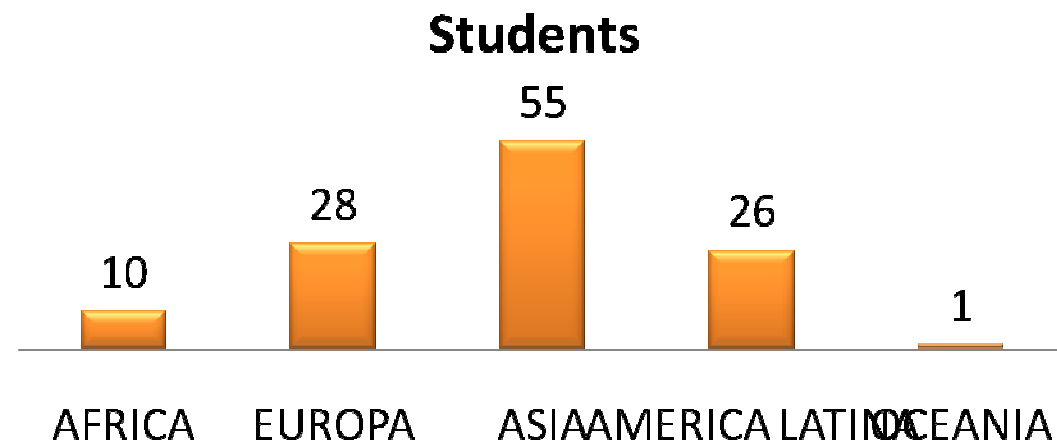
Companies contribution:

- Seminars
- Visits
- Internships for Pilot Projects
- Teaching in courses



A truly international environment

- The Master is an interesting international environment for students and teachers
- It attracts students from all over the world
- All classes are taught in English to ease international attendance



The G-TRAIN Project

- Based on the experience of the MNRA Politecnico is coordinating the G-TRAIN project funded by the European Community's within the 7 Framework Programme

- Partners:

- ENAC – France
- ISAE – France
- UniBwM – Germany
- ISMB - Italy



G-TRAIN Objectives

- Strengthen **top level education** in the field of GNSS
- Set up a **framework** for higher education addressing different educational initiatives as well as networking activities in GNSS education



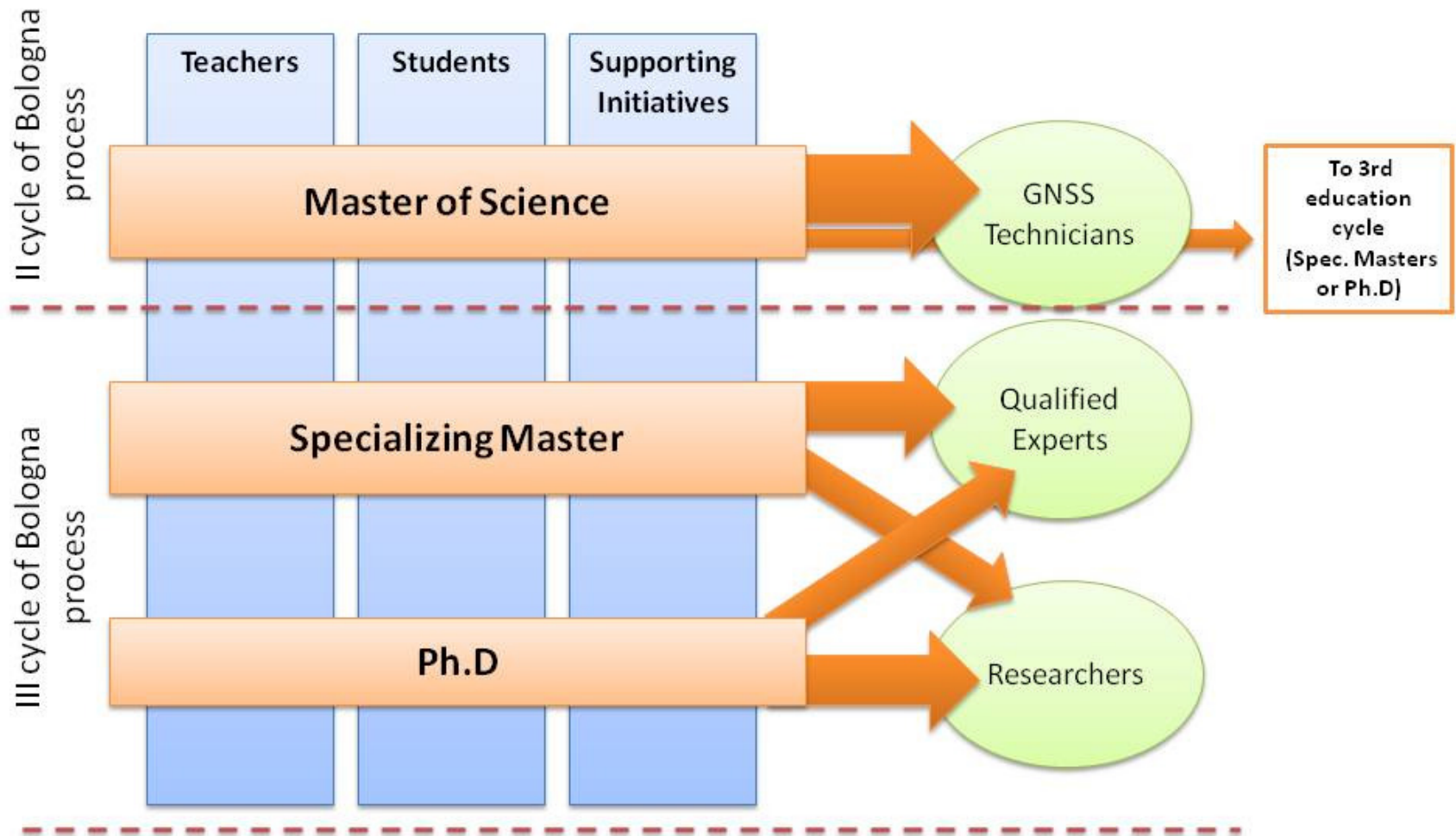
G-TRAIN goals

- Strengthening the Specializing **Master in Navigation and Related Applications** for long term professional education
- Creation of a collaborative **MSc** in GNSS managed by ENAC with the cooperation of other partners
- Supporting **Ph.Ds** training and networking
 - Specific training events for PhDs in GNSS
- Creation of the **Satellite Navigation University Network**

<http://www.gnss-sun.eu>



G-TRAIN outcomes and impact



Concluding remarks

- **Education is crucial** to tackle the GNSS challenge for innovation creation, useful applications development, and let the user take a useful benefit of the space infrastructure
- There is still a urgent need to support the education step of the value chain in several areas of the world, in order to open the GNSS opportunity worldwide and not only to the countries of the service providers
- Italy aims at playing a main role thanks to the experience developed in these years





Thank you !

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