



*The Henryk Niewodniczański
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Polish Academy of Sciences*



TIARA mid-term meeting report



Tiara

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**TIARA Objectives
TIARA structure
Mid-Term meeting objectives
Deliverables/milestones**

Mid-term meeting of the TIARA-PL group

27-28 September, 2012



TIARA Objectives



Coordinated wide scope sustainable programme

Collaborative R&D projects

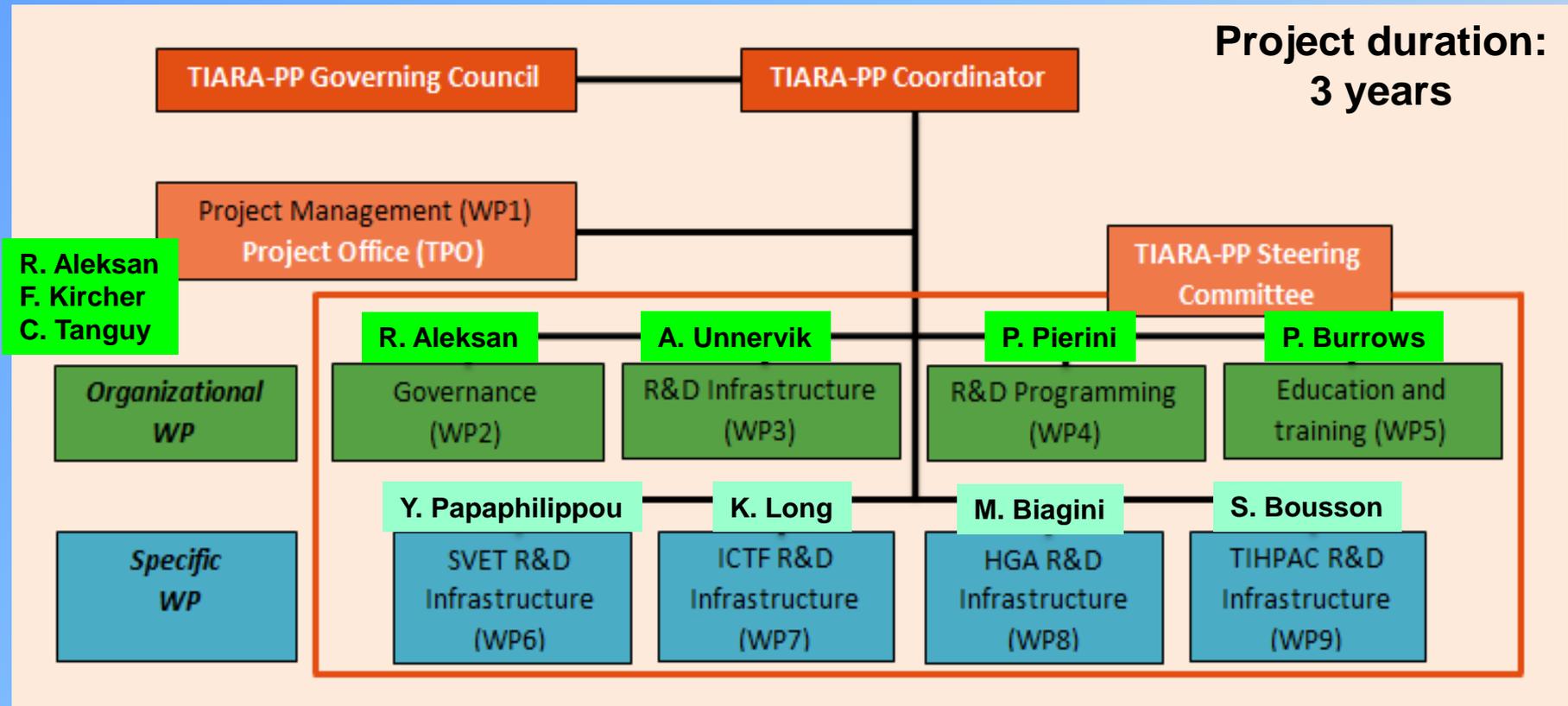
Access to broad variety of large infrastructures

Enhanced Partnership and Technology Transfer to Industry for boosting innovation

Education & Training in Accelerator Science and Technology



TIARA Structure



TIARA website: <http://www.eu-tiara.eu>



TIARA General Mid Term Meeting



Main objectives

- ❖ Provide general information on TIARA
- ❖ Review the work done so far
 - deliverables/milestones
 - highlights
 - difficulties
- ❖ Prepare for second half of TIARA-PP (ending dec. 2013)
- ❖ Exchange our views on how to strengthen accelerator R&D



TIARA Steering Committee

Roy Aleksan (CEA)
 Marica Biagini (INFN)
 Sébastien Bousson (CNRS/IN2P3)
 Philip Burrows (JAI)
 François Kircher (CEA)
 Ken Long (ICL)
 Yannis Papaphillippou (CERN)
 Paolo Pierini (INFN)
 Céline Tanguy (CEA)
 Anders Unnervik (CERN)

Local Organizing Committee (CIEMAT)

Susana Falcón Cabrera
 Marisa Marco Arbol
 Jose Manuel Pérez Morales
 Diego Obradors Campos

Information & Registration:
<http://events.ciemat.es/web/tiara>
 Contact: tiara@ciemat.es

Supported by the European Community
 (FP7 Research Infrastructures Action)

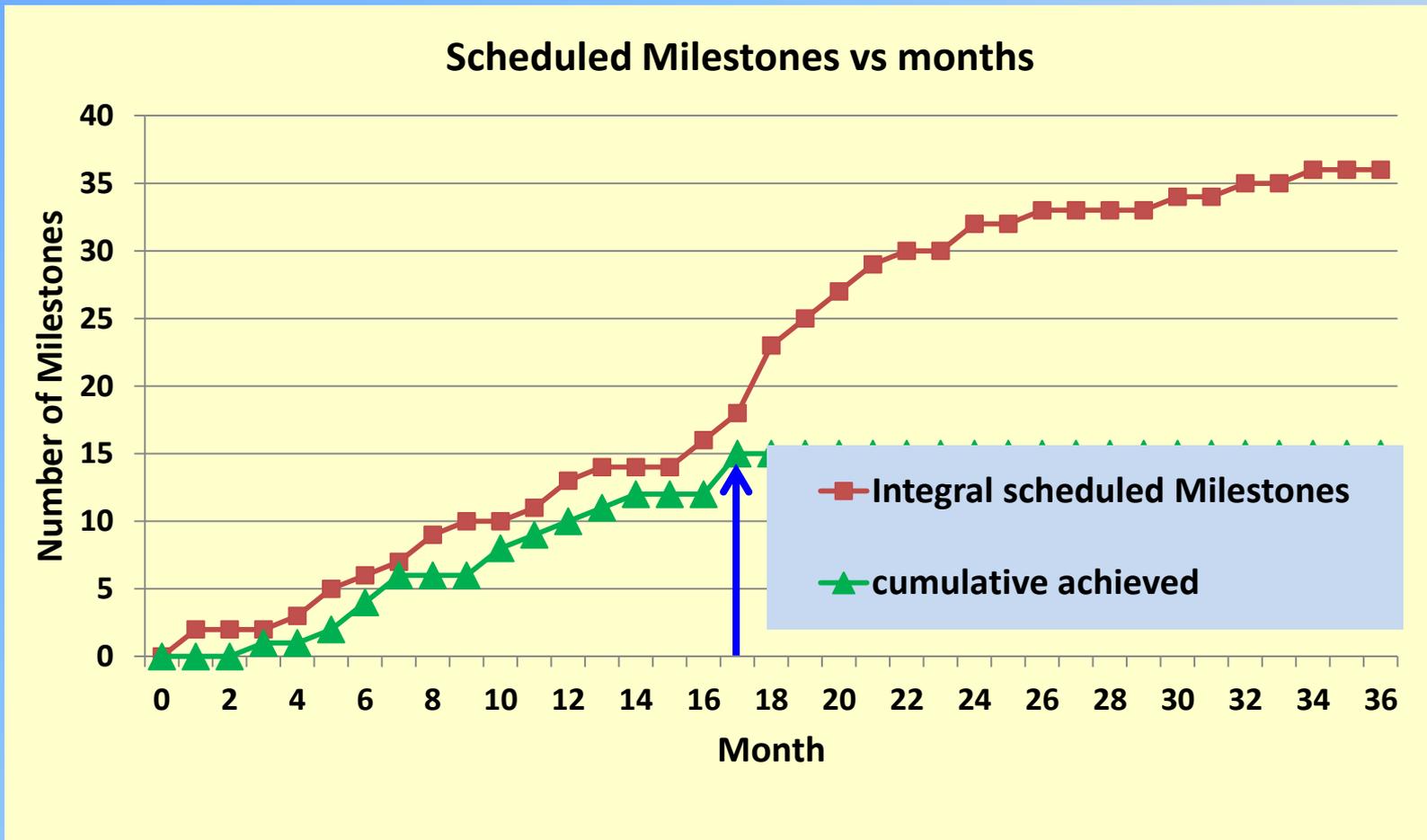




Deliverables / milestones



15 milestones are achieved out of 18 due end May
+ 1 not needed, 1 almost ready, 1 delayed





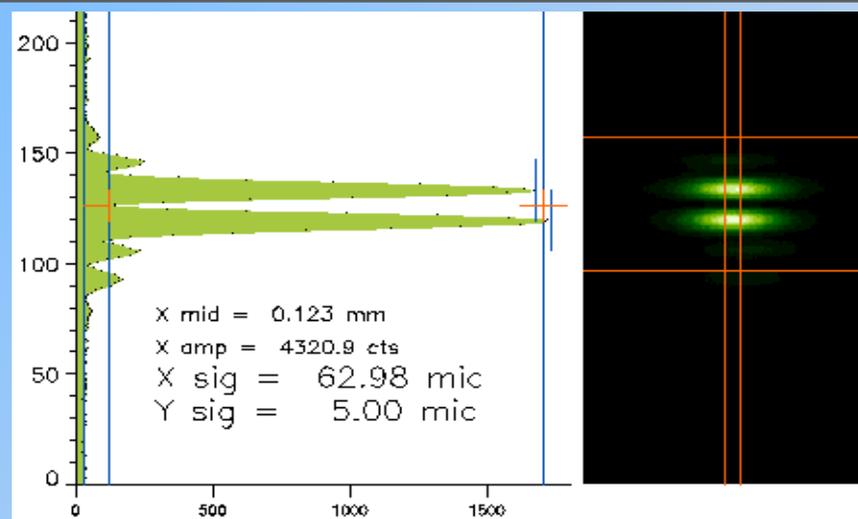
Some TIARA Achievements



- **WP4: Key Accelerator Research Area and Key Technical Issues**
- **WP5: Education and Training Survey and associated database**
- **WP3: Accelerator Infrastructure Survey and associated database**
- **WP6: World lowest emittance achieved at SLS**
- **WP7: RF distribution design of ICTF and first amplifier test**
- **WP8: first accelerating structure and input/output couplers of prototype fabricated**

Emittance achievements

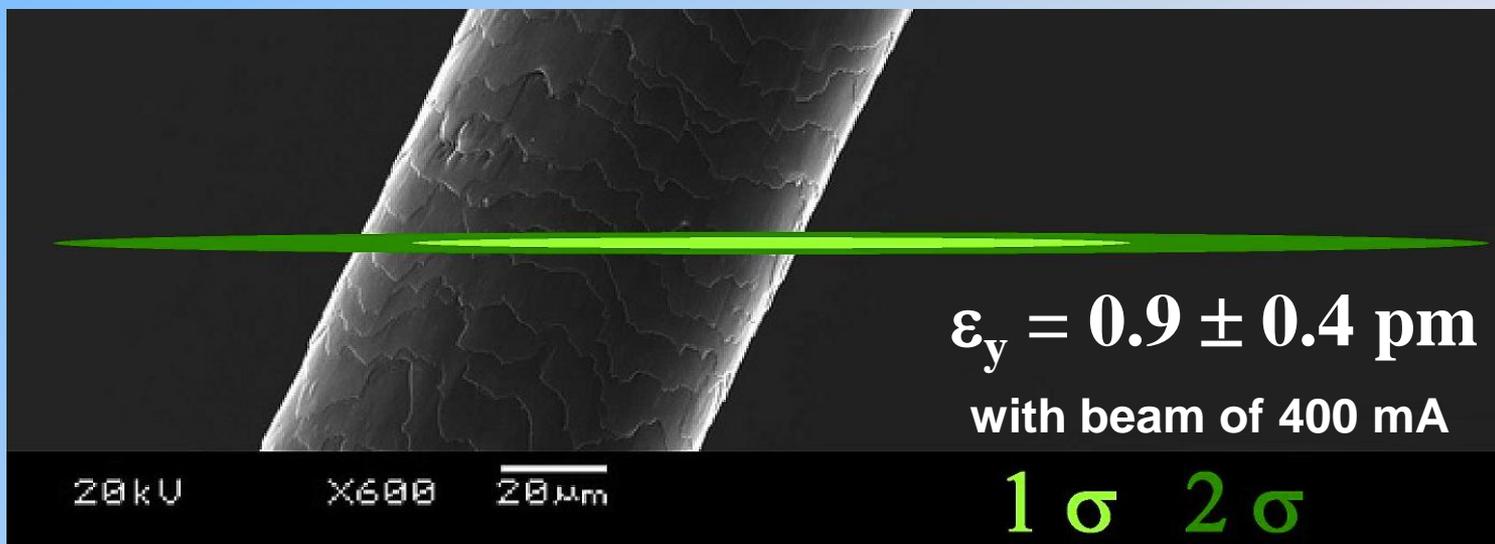
- Best result up to March 16, 2011
- ⇒ Beam height $5 \pm 0.5 \mu\text{m}$ RMS
- ⇒ $\epsilon_y = 1.9 \pm 0.4 \text{ pm}$



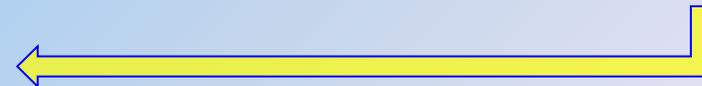
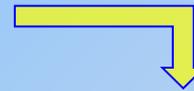
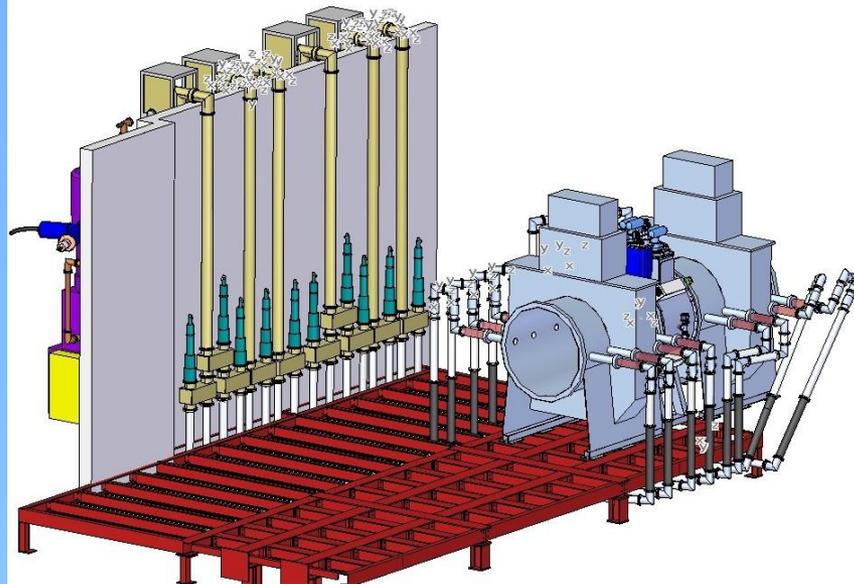
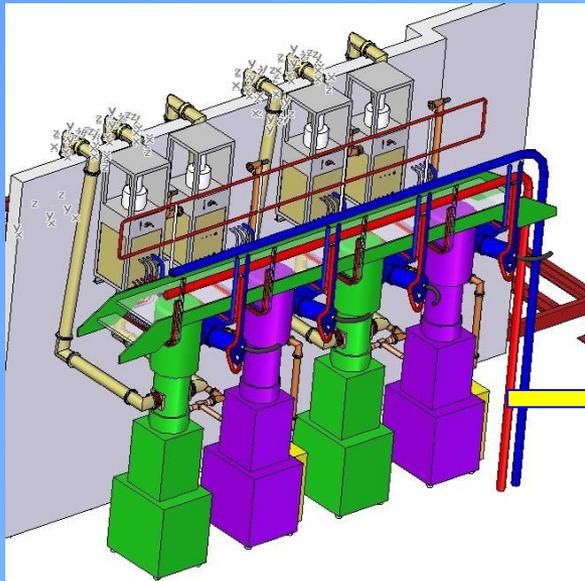
Vertical emittance WORLD RECORD

A low emittance particle beam is a beam where the particles are confined to a small distance and have nearly the same momentum.

End 2012:

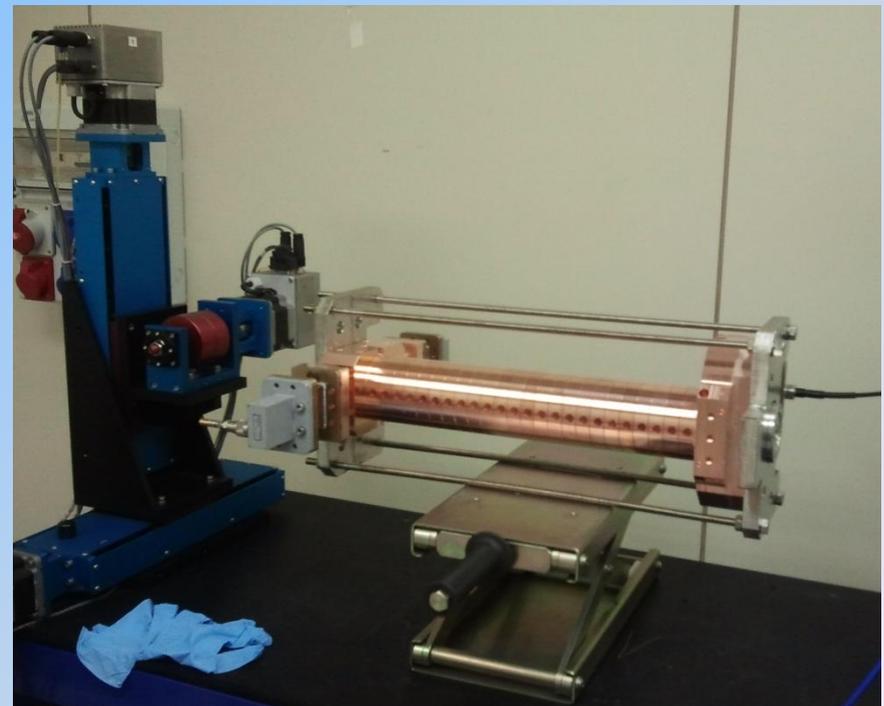
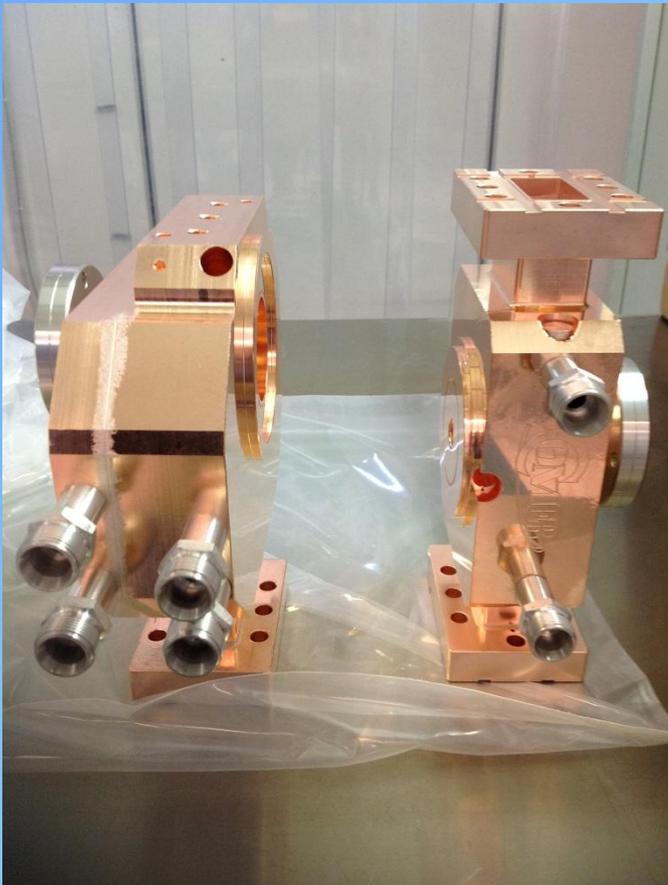


RF distribution design of ICTF and first amplifier test



SPARC test facility upgrade : first C-Band accelerating structure and input/output couplers of prototype fabricated

- Higher gradients
- Very promising from the beam dynamics point of view





Some TIARA Achievements (WP 1)



- WP1: Besides the maintenance of external and internal Websites as well as the documentation database (21 documents so far)

Some other achievements for communication

Newsletter



<http://www.acceleratingnews.eu/>

New logo



Thank R.Aleksan for sharing his slides