

Consulting Company for Environmental Applications

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Outline

1 Personal Data

2 Motivation

3 Tasks

Career

- Graduate in **Physics** by Univ. of Barcelona **2007**
- **Master** Synch. Rad and Accel. Machines by UAB **2008**
- **PhD** in Accelerator Physics by UPC-CERN **2009 - 2012**
 - Beam Dynamics
 - CLIC ($E_b=1.5$ TeV), ATF2 ($E_b=1.3$ GeV) and CTF3 ($E_b=100$ MeV)
- **Post-Doc** at SLAC **2012 - 2015**
 - Beam Dynamics
 - ILC ($E_b=0.5$ TeV), FACET ($E_b=10$ GeV) and ATF2 ($E_b=1.3$ GeV)
- **Fellow** at CERN **2015 - 2018**
 - Beam Dynamics & Stray Field Measurements
 - CLIC and ATF2
- ...EBA Consulting Company **2018 -**

Skills

- Beam Dynamics Simulations
 - Lattice Design
 - Machine Optimization
 - Monte-Carlo Studies
- Technical Documentation (Peer reviewed Publications, Reports, non-scientific communications)
- Technical Drawing Designer

- Computing
 - Particle Tracking Codes (ASTRA, ELEGANT, MAD-X....)
 - Programming Languages (Python, Matlab, Octave...)
 - Drawing Programs (AutoCad)

- Languages Spoken: Spanish (Native), English (Proficiency) and French (Advanced)
- *R&D* mind-set, team player, committed and enthusiast

Motivation

- Existing GAP between Research \Rightarrow Industry
 - Risk
 - Initial Investment
 - Safety
 - Radiation prejudices
 - Alternative technologies
- Rich spectra of e-beam applications
 - Energy
 - Power
- Environmental Applications
 - Relatively new
 - Have huge potential (Societal Priority)

Strategy

- Participation as a Member/Partner (or "Figure") of the Consortium
- Learn technical aspects
 - Accelerator
 - Vessels
 - Ind. Implementation
 - Legislation
- Building up the networking (Academia and Industry)
 - Accel./Engine Manufacturers
 - Lab./Inst./Univ
- Contribute to the required tasks
 - Viability (Optimization)
 - Funding
 - Visibility
- Strategic positioning in the consulting market

Tasks (*Open for discussion*)

- Identify relevant contributions to the successful continuation of the project by 2021
 - w/o overlapping
 - reinforcement

Proposed Tasks (*subject for discussion*)

- Increase **visibility** of the project to stakeholders (specially on Flag States and Organizations)
- Research of third-parties **funding**
- Investigation of **cost reduction** of e-beam technology by optimization of
 - accelerator performance, installation, operation
- Involving scrubber manufacturers
- Technological developments for the full-scale on-board prototype
- Participate on **Business Plan** (commercialization)

Outlook

If present proposal is welcomed by consortium partners then an agreement should be seek

- Tasks definitions
- Contribution to Consortium
 - In-cash (5K?)
 - High-qualified personnel
- Support from Consortium?



**Establish Consulting Company
EBA**

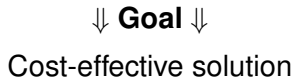
BACK-UP

Detailed Tasks

- **Visibility:** Concept description, benefits and uniqueness of this technology
 - Environmental agencies \Rightarrow Pressure on legislation changes
 - Engaging Marine Shipment/Cruiser Companies



- Obstacles identification (cost, reliability, integration..)
- Industrialization Plan



References

- A. G. Chmielewski *Latest developments in the technology related activities - initiatives of the Institute of Nuclear Chemistry and Technology*, Genova, March 2018
- T. Torims, *Development of hybrid electron accelerator system for the treatment of marine diesel exhaust gases*, Riga, May 2018
- T. Torims, *Follow-up after 1 Dec meeting at CERN state of play*, Genova, March 2018
- T. Torims, *Outline of the ARIES proof-of-concept criteria and requirements for the successful project*, Genova, March 2018