Industrialization for Compact Light

Xander Janssen

Industrialization

Main objective in future:

Standardization of X-band accelerator modules/parts

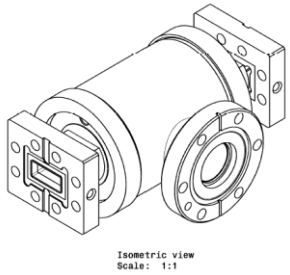
- Generic design
- Optimized from physics as well as manufacturability point of view
- Holy Grail: plug and play modules for on-site installation

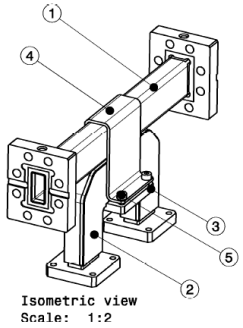
Enablers:

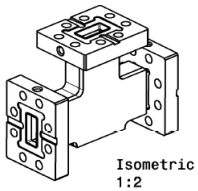
- Early involvement in design → difficult to optimize design that is finished
- Iterative approach → come up with compromise between physics and machining
- Use proven technology → ensure maturity of techniques
- Ensure readily available supply chain

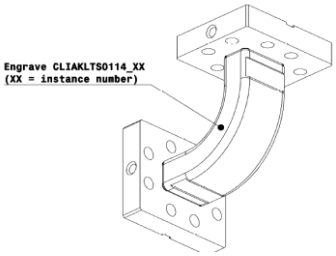
Added value VDL

- Design/Redesign of X-band RF components
  - Accelerator structure
  - Wave guide components
    - Bends
    - Bi-couplers
    - Pumping ports
    - Splitters
    - HP loads

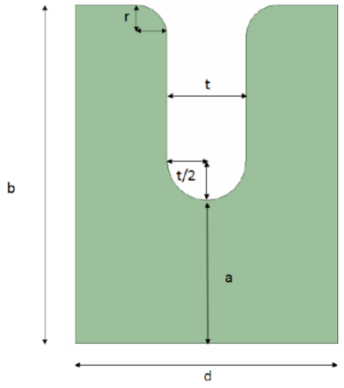






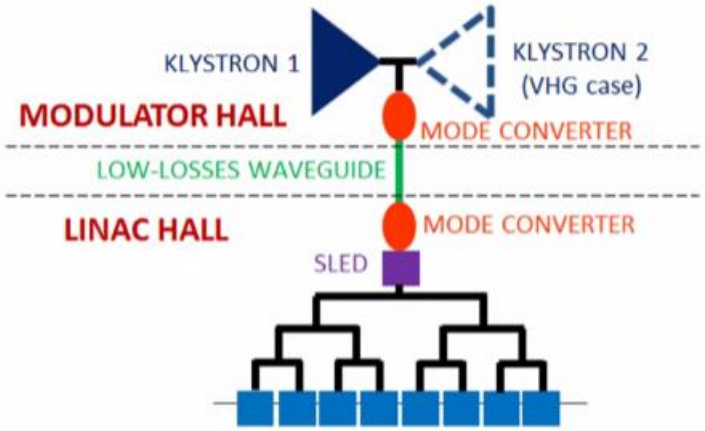


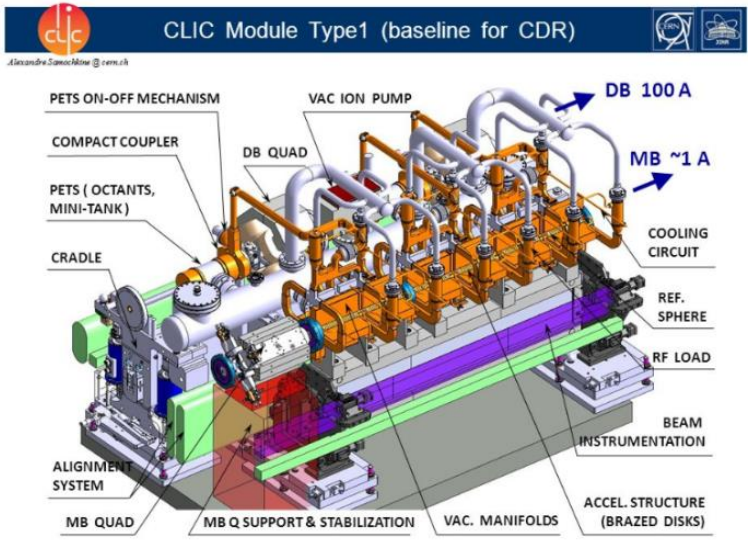
- Important parameters to asses manufacturability
  - Geometry
  - Joining technologies (bonding/brazing)
  - # cells
  - Cleanliness
  - …



Added value VDL

- System design of accelerator module





- Assess new techniques + supply chain

Specific contributions in WP tasks

Task 1: Layout and optimization of the linac rf system

→ Close collaboration to ensure manufacturability of final design

→ Asses designs on manufacturability, cost, risk, lead time

Task 2: Industrialization

→ Write industries perspective on modular design

→ Support T1, 3, 4 and 5 with manufacturability knowledge

Task 3: Modulator technology

→ Limited input from VDL

→ Outcome of this task important to asses supply chain

Task 4: Power sources for higher-harmonic systems

→ Limited input from VDL

→ Outcome of this task important to asses supply chain

Task 5: Integration

→ Close collaboration to ensure system assembly on industrial scale

Planning

- Highly dependent on planning of other Tasks
- Have to team up from start, especially with T1 and T5

Enabling your success in business...

Company Confidential