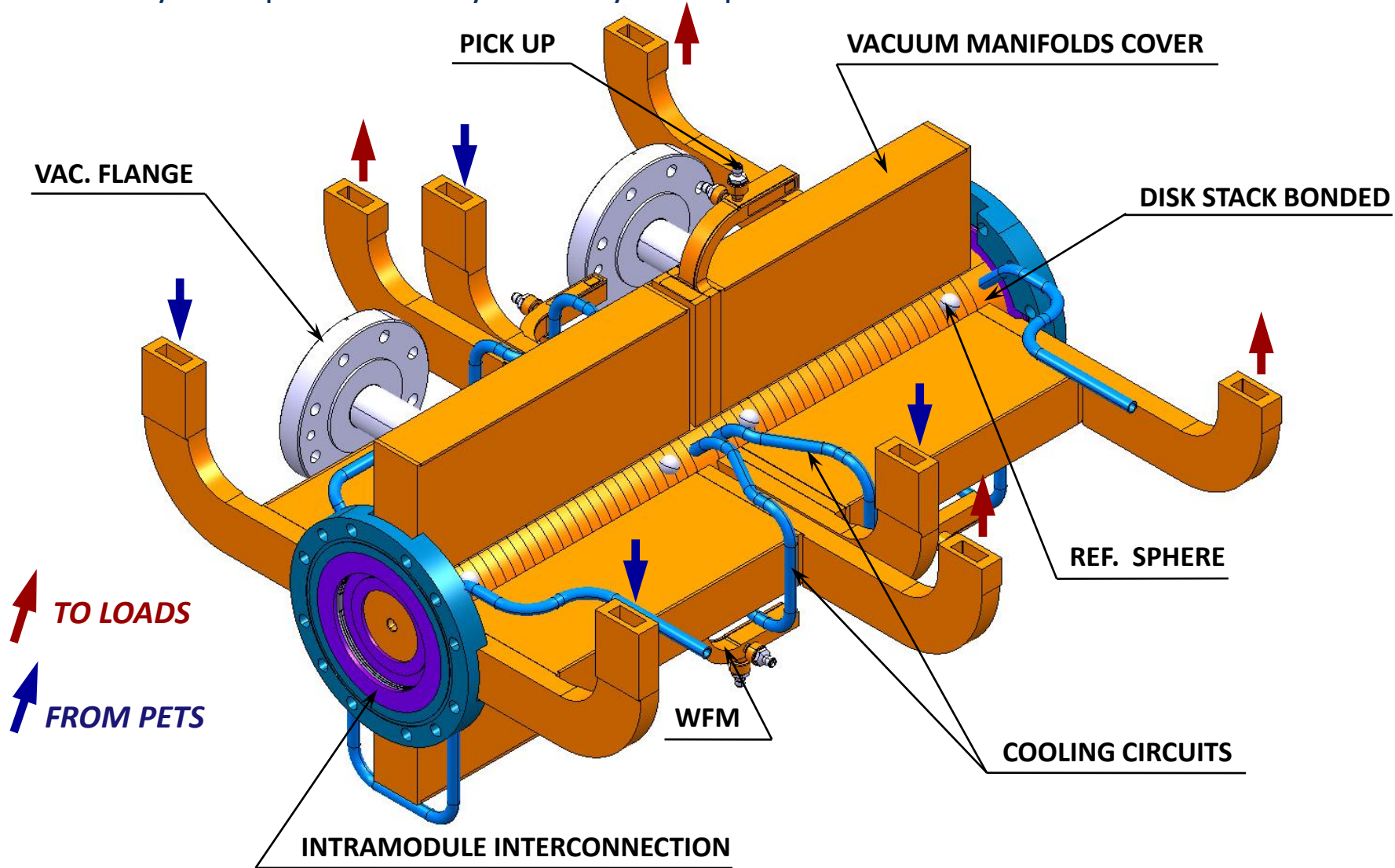


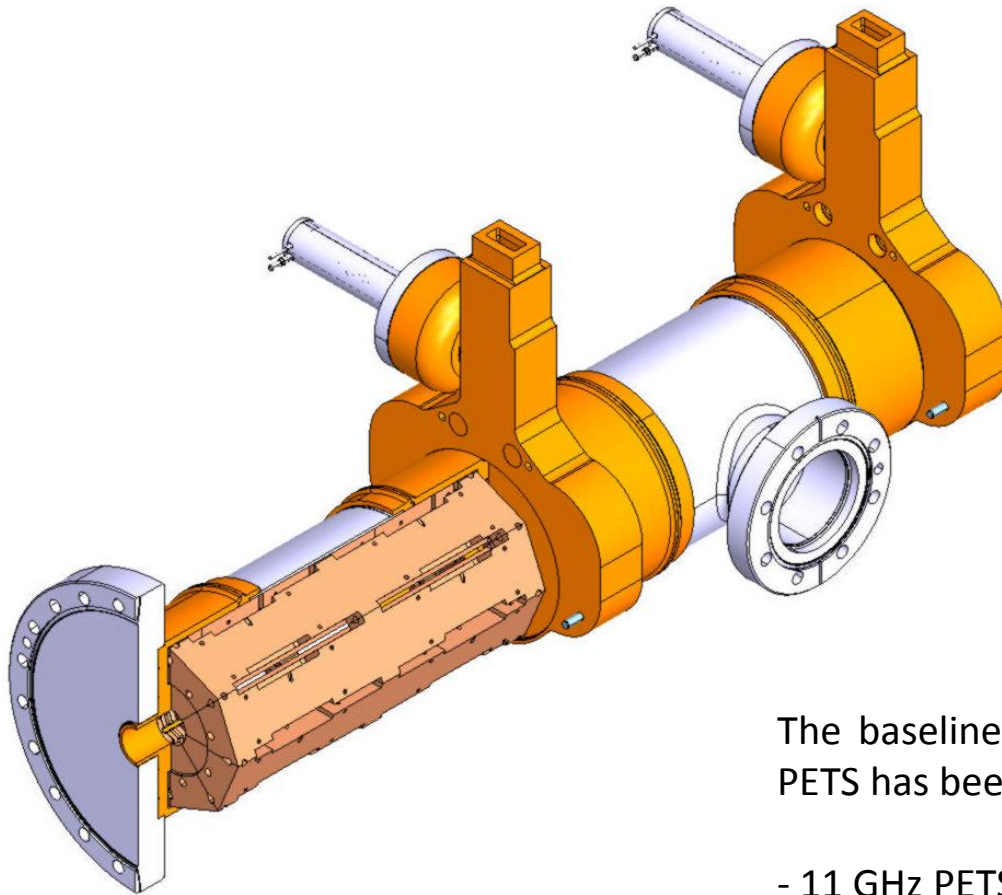
# X-band Technologies Engineering Design

A. Karlov (DUBNA, JINR)

03-Nov-2011

- Shape accuracy  $\pm 2.5 \mu\text{m}$  - assembly accuracy is  $\pm 5 \mu\text{m}$





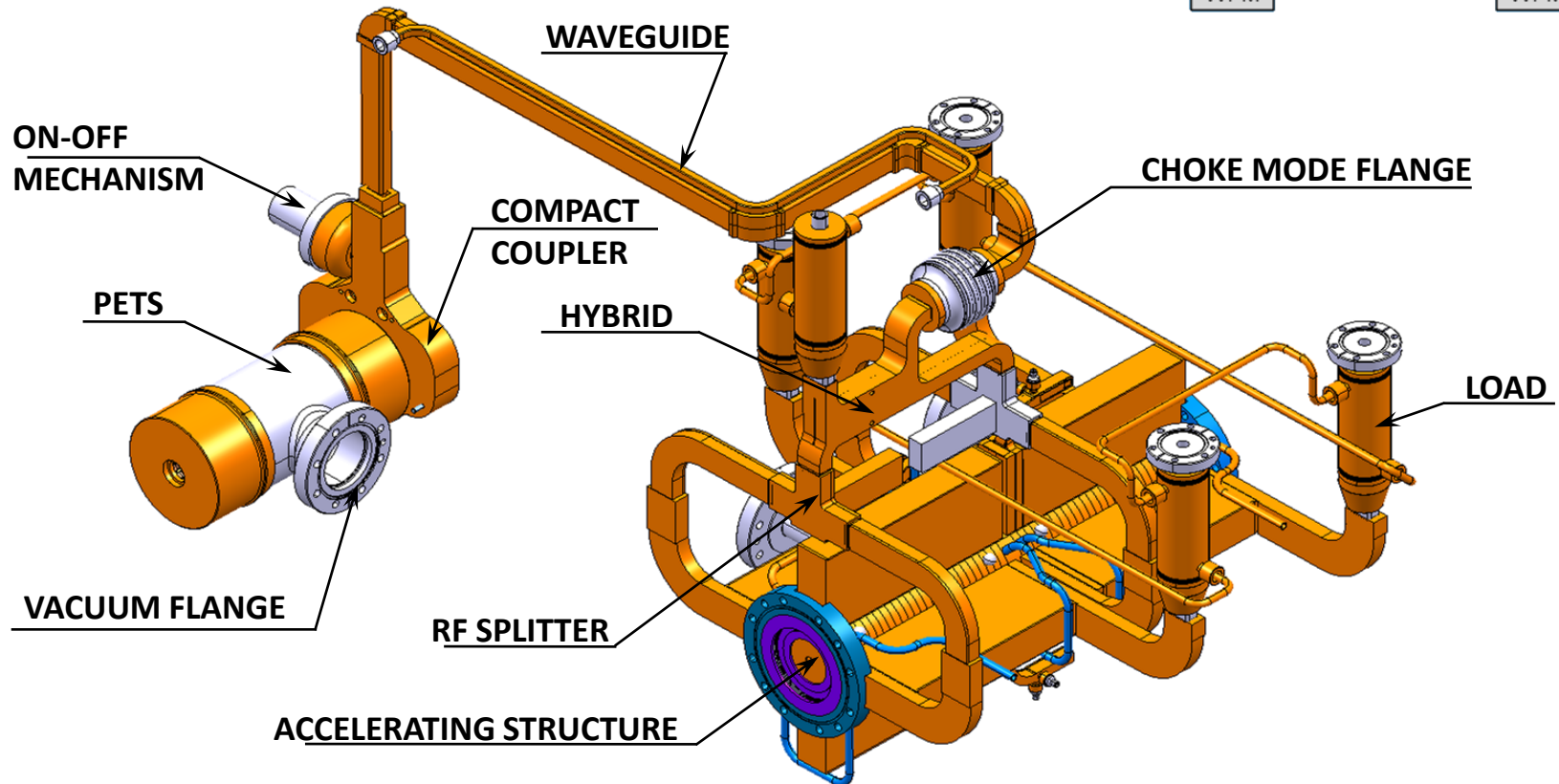
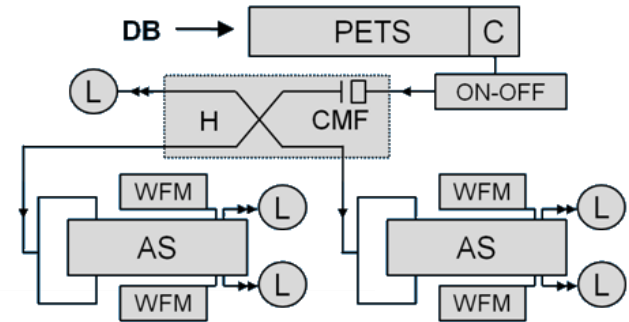
The CLIC Power Extraction and Transfer Structure (PETS) is a passive microwave device in which bunches of the drive beam interact with the impedance of the periodically loaded waveguide and generate RF power for the main linac accelerating structure. The CLIC PETS is one of the key components in the CLIC two-beam acceleration scheme.

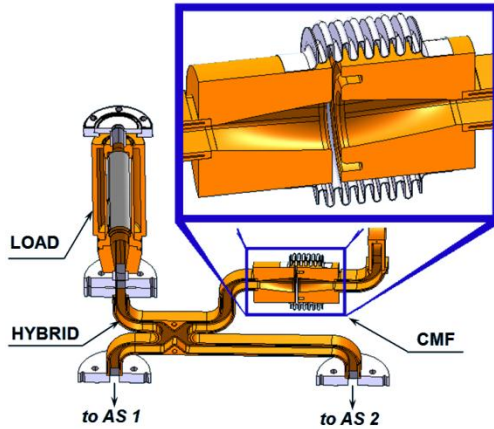
## Development background

The baseline of current engineering design of the CLIC PETS has been developed over several prototype stages:

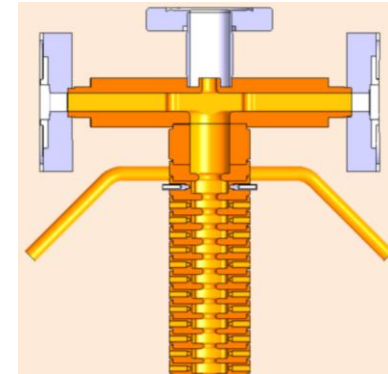
- 11 GHz PETS test stand;
- Mock-ups for TM in the lab;
- CLEX project;
- Two-beam test module.

- X-band rectangular waveguides;
- The power transmission without electrical contact between two beams, and also MB and DB independent alignment is getting possible with CMF;
- Hybrid, RF loads, splitters

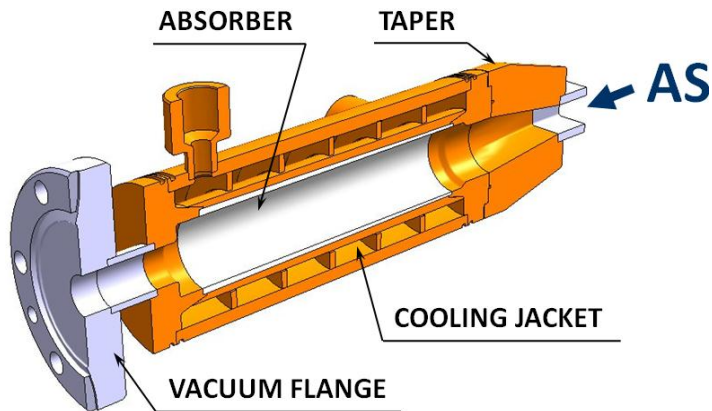




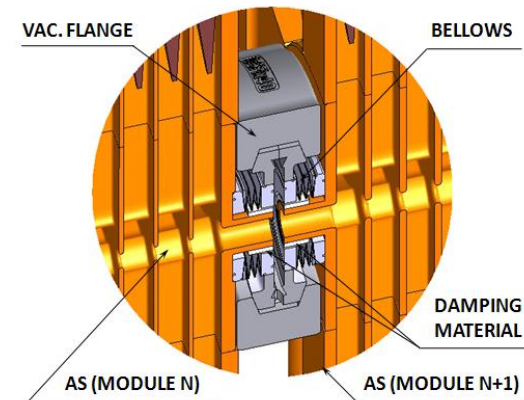
**3D model of the choke mode flange, hybrid and load**



**Design of Damped Detuned Structure**



**Mechanical design of compact load**



**3D model of the Inter-module vacuum interconnection.**