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# Move Forward Science with Thales Products & Services

Particle accelerators, high power sources and modulators

## Know-how and Assets developed over years

- Design, Manufacturing, Commissioning and Maintenance
- > High technical expertise:
  - Advanced calculation means and simulation tools
  - Original patented solutions for outstanding performances
- > High industrial quality standards
- Up to complete turnkey systems
- New systems, upgrades or renovation
- Close cooperation and proven involvement to satisfy customers

## Accelerators

- Simulation and design
- Components manufacturing
- System automation

#### Electron linac

- > 50 MeV for synchrotron or Free Electron Laser
- > < 15 MeV for compact X-ray source

### Generators - RF sources

### Wide range of specifications:

- High Pulsed Power: 100kV-1MV, 10kA-400kA
- > RF Power Amplifier: Up to 2MW
- Narrow band or broadband
- > 1% to 100% duty cycle

Various principles and technologies including original patented Solid State Power Amplifiers

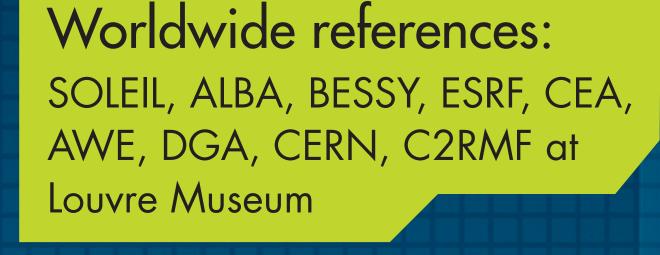
## High voltage modulators

For RF and microwaves tubes:

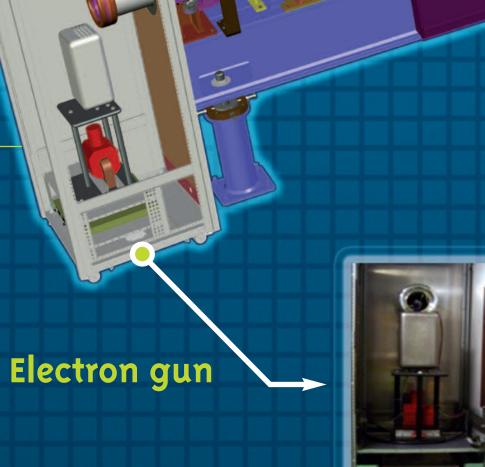
- > TWT
- klystron/magnetron

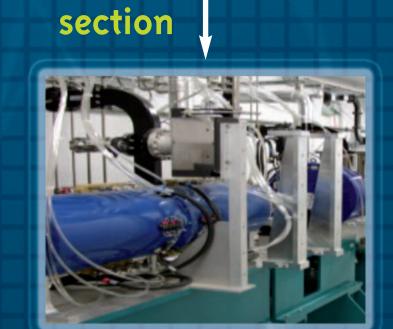
NEW: SICMOS technology as alternative to IGBT

> Higher switching frequency with higher efficiency



Bunching







Accelerating























