

Space Passive Components Days 2nd SPCD edition

Welcome Speech

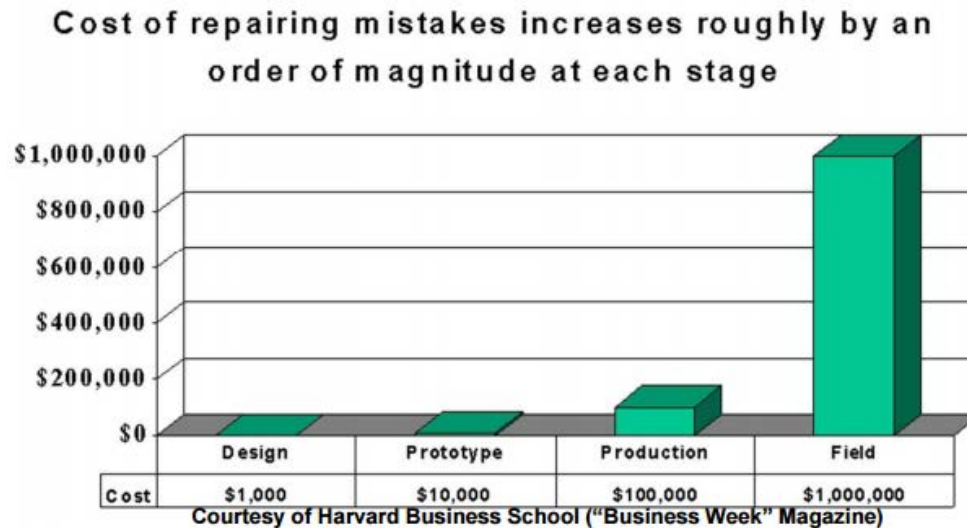
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ESA/ESTEC – 12/10/2016

SPCD, 2nd edition

Passive Components represent more than 80% of the EEE parts used in spacecraft. Therefore, they represent a major concern for space applications.



In recent years, the development of Passive Components has been driven by reliability, performances, new functionalities, mass and volume saving and cost reduction.

The SPCD international Symposium is the premier technical conference dedicated to Passive components for space applications.



	Capacitors & Supercapacitors		Circulators & Isolators		Crystals & oscillators		Fuses
	Connectors		Filters		Relays & Switches		Magnetics
	Loads & Attenuators		Power dividers & couplers		RF switches & Phase shifters		Wires & Cable assemblies
	Resistors		Thermal Parts				

Seven technical sessions: **41 presentations**

- Technology Roadmaps
- Normative System & Standards
- New Developments
- Materials and Processes
- Application, Trends & Needs
- Test, Reliability & Evaluation for space
- Evaluation & Qualification

+ a special **interactive panel session**, which is promising to be extremely lively:
" Commercial vs. COTS+ vs. Qualified passive components for space applications "

Dedicated poster session : **19 posters**

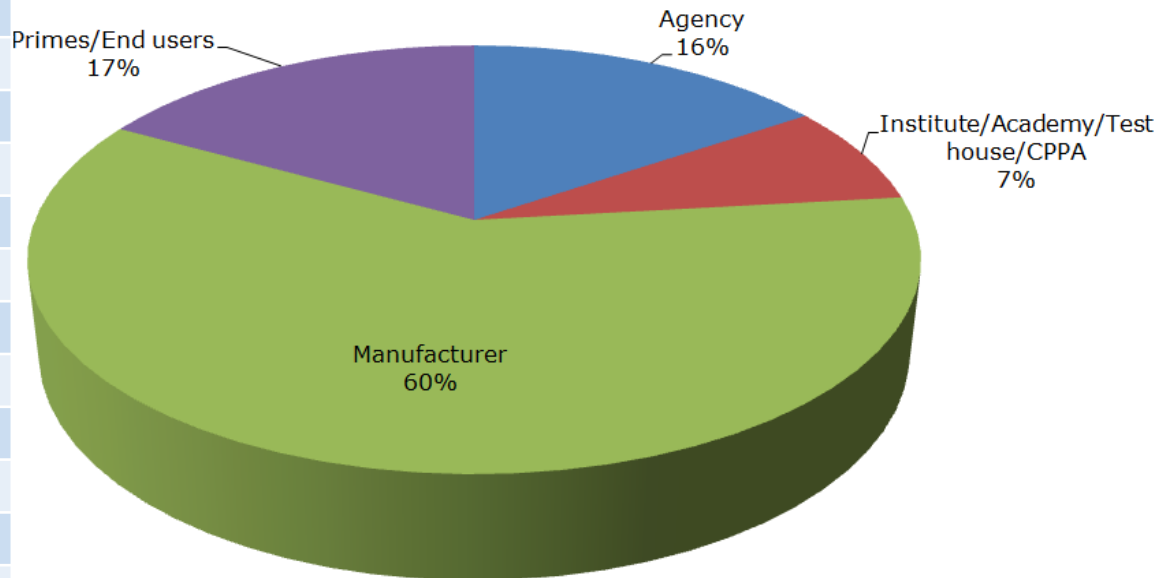
Exhibition : **23 booths**

19 Countries

- Belgium
- Czech Republic
- Denmark
- Finland
- France
- Germany
- Italy
- Japan
- Luxembourg
- Netherlands
- Portugal
- Romania
- Russian Federation
- Spain
- Sweden
- Switzerland
- Turkey
- United Kingdom
- United States of America

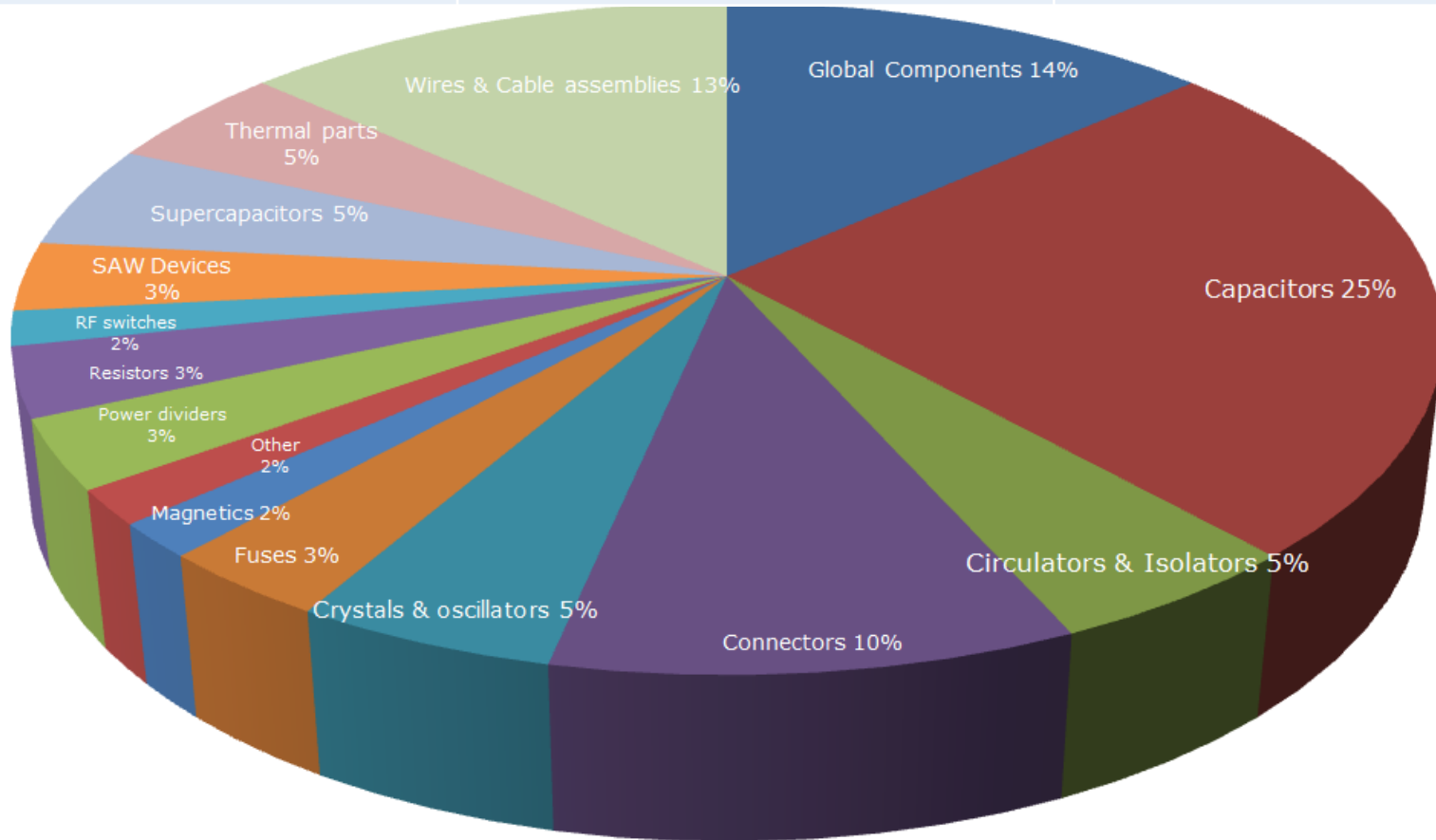
Number of Participants

220

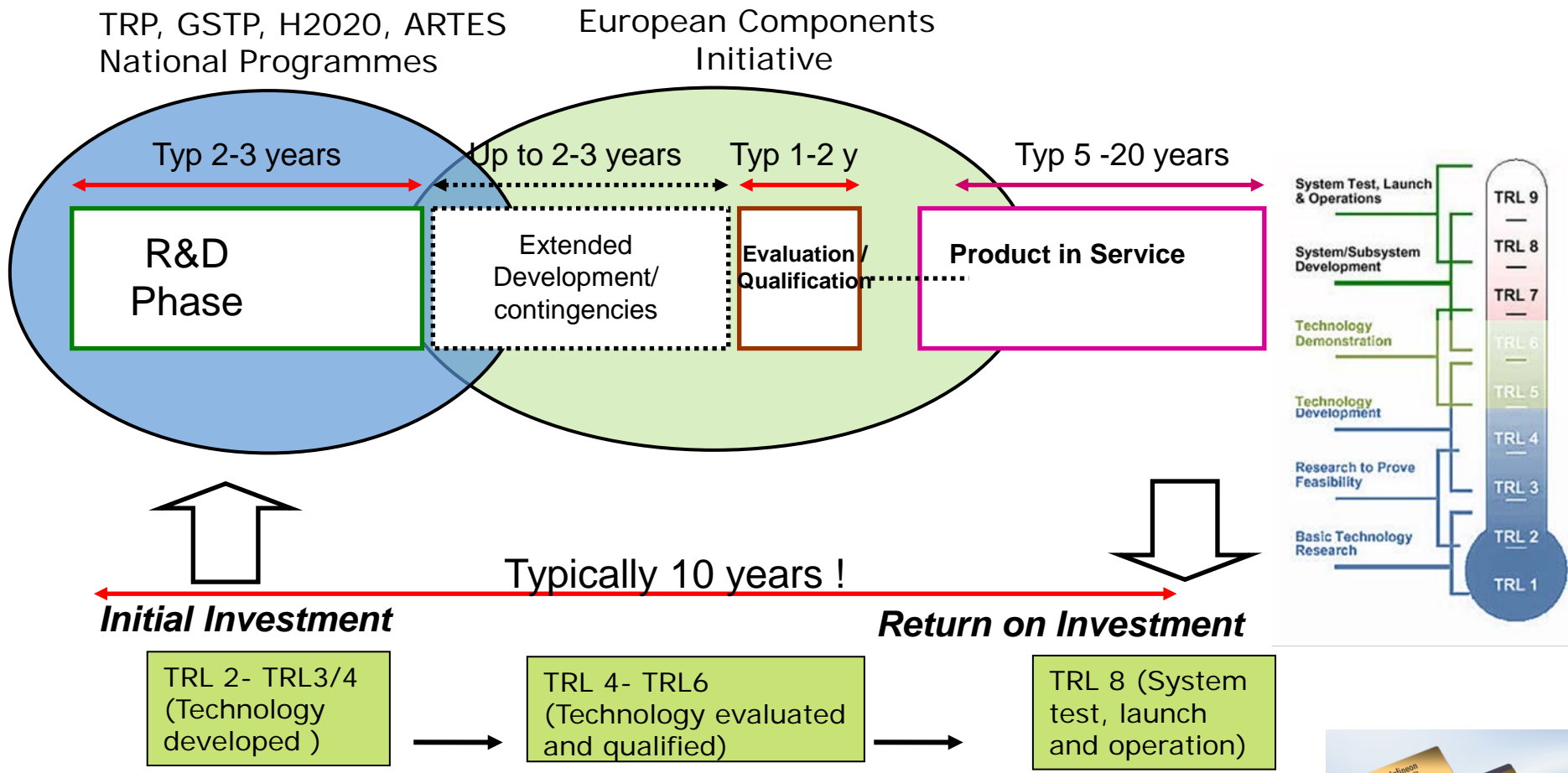


Components vs Presentations

Standard Passive	RF Passive	Standard + RF Passive
61.67%	16.67%	21.67 %



Timeline From R&D to Commercialization



Examples of qualified products in service:
 AVX Type 1 capacitors since 1983, Infineon CFY66/67 GaAs HEMT since 1994....



One example of building up the Space passive component supply chain in Europe

2004: ECI recognized the need for a European supply chain for qualified space passive components and launched one of its first qualification activities in the domain.



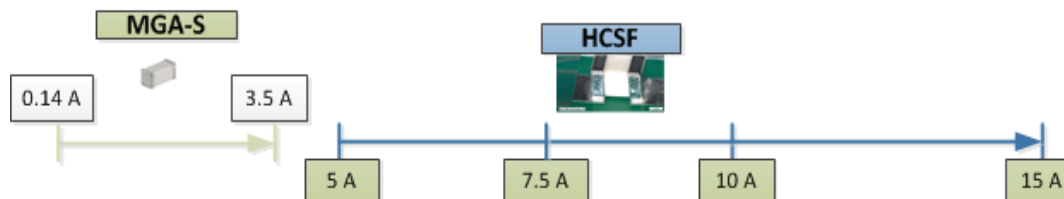
- ECI phase 1: Evaluation & Qualification of an European Thin Film Fuse (0.14A- 3.5A) with Schurter (CH)
 - QPL listed since 2008.
 - Sales are now in excess of 180,000 fuses for space applications.



HCSF

This was followed by -

- ECI phase 2: Evaluation & Qualification of High Current Space Fuses (HCSF) fuses up to 15A with Schurter (CH)
 - QPL listed in 2016.



Conclusions

Non-dependence continues to play a major role for the competitiveness of the European Space Industry

- Joint Task Force of EDA-EC-ESA reviewing the critical items for non-dependence,
- ESCC roadmap identifying the critical technologies for both competitiveness and non-dependence.
- ESA JAXA cooperation creating an alternative source for the ITAR free EEE-supply chain,
- Close coordination with National Space Agencies to map and invest on critical capabilities.

However, the industrial landscape continues to evolve:

- Public–Private Partnerships
- Cubesats with limited mission duration and reliability requirements
- Mega-Constellations
- “New Space” with new entrepreneurs and new risk taking
- Terrestrial demand towards high-rel components (safety critical automotive, energy applications etc.)

Reflection on the changing industrial environment requires new programmatic and normative approach towards the development, qualification and utilisation of EEE-components.

Passives domain is a key to this change, consequently, please use this event as a networking opportunity to trigger new initiatives.