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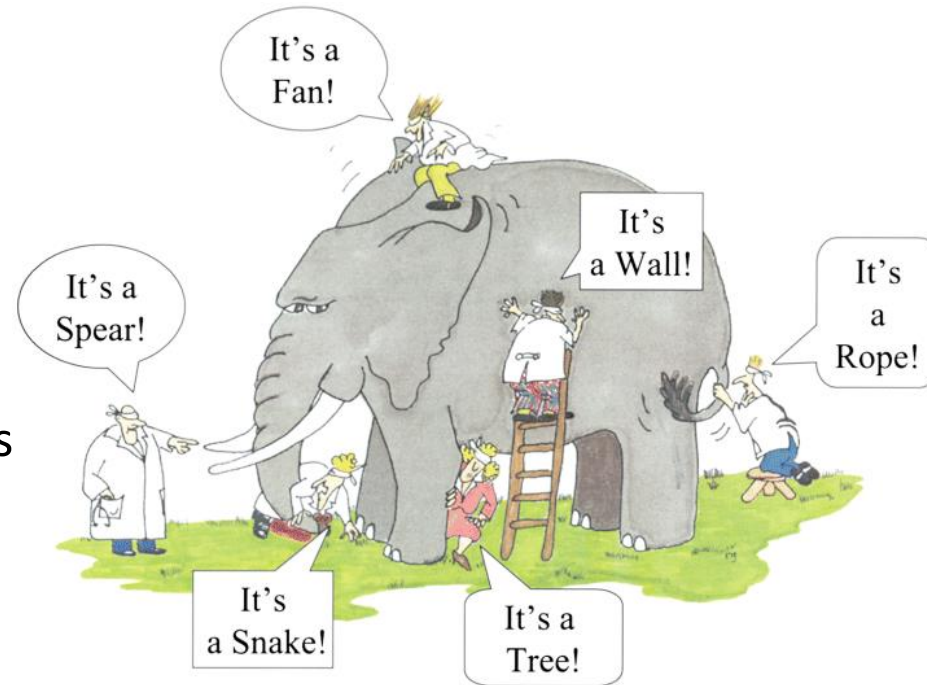
# ILO Training Day – 25 September 2018

Functional specifications vs. Build-to-Print

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# Functional specifications vs. Build-to-Print

- Standard off-the-shelf industrial products or systems easily available on the market.  
=> functional specification
- Non-standard products which can be produced with existing manufacturing techniques and/or technologies  
=> functional specification  
Prototypes and/or pre-series needed?
- Non-standard products where industry has neither the required know-how nor the immediate interest to develop and design the products for its existing markets  
=> built to print specification  
Prototypes and/or pre-series needed?
- On-site services (maintenance, operation, etc.).



# Build-to-Print

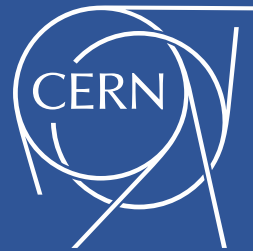
IT Ref.	Description	Type of Specification		Value of the contract	Justification
		B-2-Print	Functional		
IT-4309	Crab Cavities	√		2.8 MCHF	<ul style="list-style-type: none"> <li>- Specific equipment of the accelerator, designed to tilt the beam;</li> <li>- Design, modelling, and prototype made at CERN;</li> <li>- Non-standard, not off-the-shelf equipment;</li> <li>- No immediate interest for existing market identified;</li> <li>- Major importance for the accelerator.</li> </ul>
IT-4319	Beryllium Chamber	√		1.6 MCHF	<ul style="list-style-type: none"> <li>- Specific equipment of the accelerator, at the core of the detectors;</li> <li>- Design made at CERN;</li> <li>- Non-standard, not off-the-shelf equipment;</li> <li>- Major importance for the accelerator;</li> <li>- Require production expertise by the contractor.</li> </ul>
IT-4228	Manufacturing of SIRIUS Power Converter	√		10.2 MCHF	<ul style="list-style-type: none"> <li>- Design, modelling, and prototype made at CERN;</li> <li>- Non-standard, not off-the-shelf equipment;</li> <li>- No immediate interest for existing market identified;</li> <li>- Major importance for the accelerator.</li> </ul>
IT-4364	Manufacturing of Input & Output Modules for Power Converters	√		800 kCHF	<ul style="list-style-type: none"> <li>- Design, modelling, and prototype made at CERN;</li> <li>- Non-standard, not off-the-shelf equipment;</li> <li>- No immediate interest for existing market identified;</li> <li>- Major importance for the accelerator.</li> </ul>

# Functional specifications

IT Ref.	Description	Type of Specification		Value of the contract	Justification
		B-2-Print	Functional		
IT-4352	Assembly Tooling for cryostats		√	650 KCHF	<ul style="list-style-type: none"> <li>- CERN defined the characteristics and the functionalities required;</li> <li>- Contractor defines the most appropriate technical solution;</li> <li>- Contractor has expertise from similar tooling, knows the standards in force, and has the facilities for testing;</li> </ul>
IT-4376	GFRE Cold Supports		√	750 KCHF	<ul style="list-style-type: none"> <li>- CERN defines the shape, the environmental conditions, and the maximum volume</li> <li>- CERN leaves the Contractor to define the design, prepares the execution files, and define the associated manufacturing process.</li> </ul>
IT-4486	Supply of Metal Bellows expansion joints		√	690 KCHF	<ul style="list-style-type: none"> <li>- CERN defines the characteristics (Material grade, dimensions, expansion limits, Pressure, Temperature, and stroke);</li> <li>- CERN leaves the Contractor to define the design, prepares the execution files, and define the associated manufacturing process.</li> </ul>
IT-4467	Supply of Energy Storage systems for HL-LHC		√	370 KCHF	<ul style="list-style-type: none"> <li>-Supply does not exist on the market, and will probably be a modification of an existing system.</li> <li>- Contractors have the expertise</li> </ul>
IT-4335	Design, supply and installation of an evaporator		√	450 KCHF	<ul style="list-style-type: none"> <li>- Design, supply, integration and installation of an evaporator in an existing wastewater treatment plan;</li> <li>- Characteristics defined by CERN, most appropriate technical solution to be defined and proposed by Contractor;</li> <li>- Contractor has a better knowledge of the various techniques and product on the market;</li> </ul>
IT-4108/EP	Supply, installation, commissioning and maintenance of modular data centres ALICE and LHCb		√	ALICE 3.9 MCHF  LHCb 5.1 MCHF	<ul style="list-style-type: none"> <li>Expert firms available in the member states.</li> <li>Characteristics defined by CERN, most appropriate technical solution to be defined and proposed by Contractor;</li> <li>- Contractor has better knowledge of the various techniques and products on the market;</li> <li>- Contractor has the Design and study office that we do not have.</li> </ul>

Thank you and any questions?





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