

Nb	Description/subject	Responsibility
1	Media system design (low current, diagnostic and IT cables), rack	Purchaser
2	Cables delivery - low current, motors, diagnostic, racks (based on documentation from Solaris)	Purchaser
3	Cables prefabricating (e.g. connectors installation), laying, testing, connecting - (low current, motors, diagnostic), racks	Purchaser
4	Cables delivery – (power, IT infrastructure) (based on documentation from Solaris)	Purchaser
5	Cables prefabricating, laying, testing, connecting, placing in the rack cabinet - (power, IT infrastructure)	Purchaser
6	Control system -IT (hardware, i.e.: servers, network switches): delivery (based on documentation from Solaris)	Purchaser
7	Control system: software (Device Servers for standard Solaris components)	Purchaser
8	Control system: software (Device Servers for non-standard SOLARIS equipment provided by Contractor)	Contractor
9	Control system: software configuration, installation (GUI, integration, communication, network configuration)	Purchaser
10	Motors, limit switches and position encoders enabling the operation/control of the movable components (including the cabling from equipment to patch panel if applicable)	Contractor
11	Selection of the proper motor for each motorized component design in the frontend and beamline section together with its installation on the desired place and configuration of limit switches. Preferred solution should include stepper motors with the mechanical limit switches.	Contractor
12	Preparing intermediate patch panels located on the supports of the motorized element for motors, encoders, limit switches and SOLARIS standard motion controllers (IcePAP) – if applicable	Contractor
13	Providing a table (included in Appendix CS1 table 10.3) with parameters necessary to control the motors. For those parameters that can be changed, the Contractor is required to specify ranges in which they can be changed without impact on precision and repeatability of the movements.	Contractor
14	Providing the documentation necessary for configuration and maintenance of the motors, installation of the cabling and controller.	Contractor
15	If a controller requires another type of power supply than IEC 60320 type plug, delivery of dedicated adapter or dedicated power supply.	Contractor
16	Delivery of the complete list of commands for remote control of the equipment along with the programming manual for all components, as required by SOLARIS CSIT group (Appendix CS0 3.2 d) .	Contractor
17	Providing the control logic of all devices as well as possible dependencies between them (e.g. logic of safe operation).	Contractor
18	Providing software licenses for software used with equipment (e.g. GPL, LGPL, MIT, etc.) license.	Contractor
19	Providing connection to the mains for the controller/s and driver/s.	Purchaser
20	Providing Ethernet connection between the racks, network switches and control system computers	Purchaser

21	Providing Tango Controls system backbone including properly configured virtual machines, Device Servers for SOLARIS-standard devices as well as integration of all control system (including Device Servers supplied by the Contractor).	Purchaser
22	Providing GUI-s.	Purchaser
23	Providing Control System workstations with the operating systems if needed.	Purchaser
24	Providing IcePAP controllers for the motors/encoders of position and their configuration.	Purchaser