

**DOCUMENTED CHANGE REQUEST**

Document Title:	
Date Modified:	Revision: V1.1.1
Revision Note:	
IFS Document #:	Alt Doc #:

**PROJECT INFORMATION**

Proposal Number:	QXQ1K1017B_V1.5
Project Number:	P4CZ009933
Project Name:	Personal Safety Interlock System
Project Manager:	Stephan Richter

**CHANGE INFORMATION**

DCR#: 01	Date: 24.10.2018
Subject: Additional E1 control panels and trapped key System/ Connection to L1 building fire alarm system	Initiated By: Eli Beam

**Classification of Request:**

<input checked="" type="checkbox"/> Functional Change	<input type="checkbox"/> Documentation Error
<input type="checkbox"/> Clarification	<input type="checkbox"/> Operational Suggestion
<input checked="" type="checkbox"/> Final Design Detail	<input type="checkbox"/> Schedule Change
<input type="checkbox"/> Other: Engineering Support	

**Recommended Priority:**     High     Medium     Low

**Areas Impacted:**

<input checked="" type="checkbox"/> Hardware & Engineering	<input checked="" type="checkbox"/> Software & Engineering
<input checked="" type="checkbox"/> Drafting	<input checked="" type="checkbox"/> Assembly
<input type="checkbox"/> Other:	

Description of Change		
Item No.	Item Description	Price
1	<p><b>Provision of additional secondary control panel(s) for status display and mode changing:</b></p> <ul style="list-style-type: none"> <li>The primary control panel shall remain as before in the control room of E1;</li> <li>Change to the location and behavior of the trapped key permissives are required.</li> <li>Primary control panel will <u>not</u> be used to enact Alignment and High Power mode.</li> <li>Three (3) additional secondary control panels shall be added to the E1 system;</li> <li>The locations are:               <ul style="list-style-type: none"> <li>One by the entry door, to the right of the door when standing in E1.</li> <li>One quite centrally on the west wall (where the control centre for the HHG source is).</li> <li>One on the east wall in the SRS enclosure.</li> </ul> </li> </ul>	23.870 €



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- The secondary control panel(s) shall be as compact as possible and consist of a wall-mounted cabinet of minimal depth and shall be provided with installation and all necessary cable management and routing;
- The secondary control panel(s) shall include the same PavelView HMI display panel as in the control room (as in P4CZ009933-DWG-1304);
- The secondary control panel(s) shall be equipped with a Beam off Button (BoB) in accordance with existing requirements;
- The secondary control panel(s) shall be equipped with a pair of Trapped Key sockets for Alignment and Hi-Power Mode activation.
- From a secondary control panel, it shall be possible to:
  - View the same status information as displayed in the primary panel (for example Figure 40 in P4CZ009933-FDS-en(V1.0B));
  - Enact mode changes from master secondary panel (Provided all relevant enabling conditions (including key permissives) have been given) **with the exception of enacting mode changes M0 – Closed and M3 – Search**, which shall be possible only from the primary display panel;
  - Request a transition to a less hazardous state from all secondary panels (e.g., M4->M2 or M2->M1) without entering any pin number or user credentials with a minimum number of user operations (i.e., a single button press);
  - Perform all other operations in an identical way to the main control panel, such as resetting interlock trips and viewing alarms;

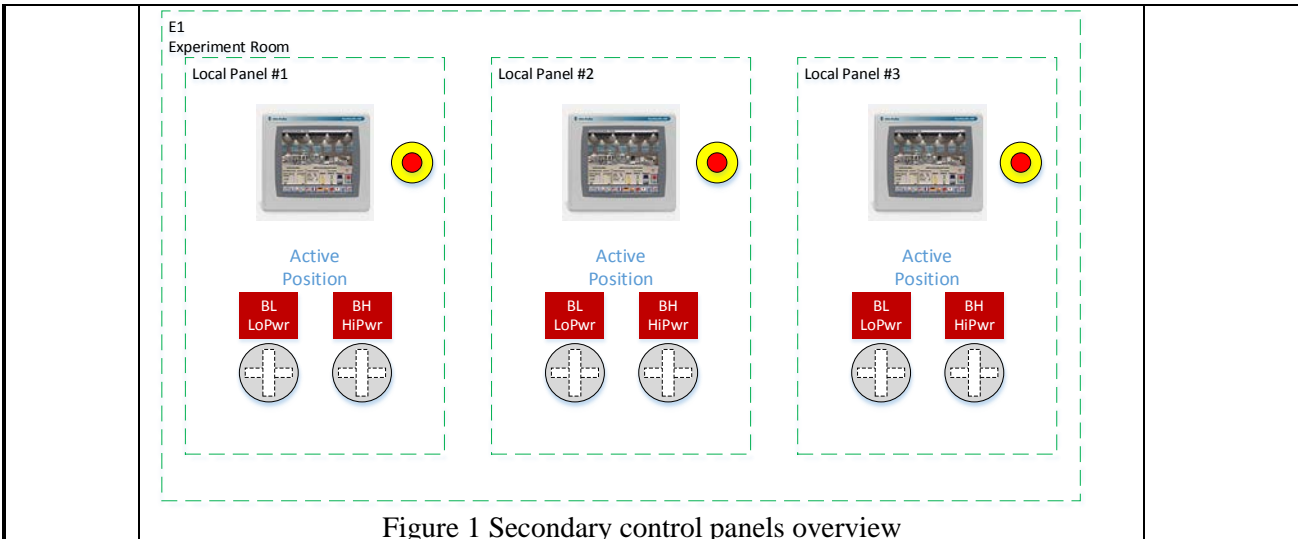
### Multiple control point lockout

- Since this change request necessitates the possibility to control the interlock system from multiple control panels, it will be necessary to implement a software lock out;
- When an operator activates Alignment key in Trapped Key socket within a specific secondary control panel, it shall reserve that specific panel for exclusive control (master) and trigger a lockout on all other secondary panels (slaves);
- Panel with exclusive control privileges is permitted to enact mode change to Alignment and Hi-Power Mode;
- Panels that are locked-out shall not be permitted to enact any mode changes, but shall not be prevented from displaying the full range of normal on-screen ‘read-only’ status information;

Panels that are locked-out shall continuously display a clear ‘padlock’ icon or similar status indicator, and should display a notification when an operator tries to use the locked-out panel to enact a mode change;

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2	<p>Signal to the LSS of a building fire alarm in L1 hall</p> <ul style="list-style-type: none"> <li>Provision of a pair of monitored normally open contacts in the L1 cabinet (L.00.10) in a dual channel configuration;</li> <li>Contacts shall be opened in case of a building fire alarm and closed under normal conditions;</li> <li>The signal Fire_alarm_L1 on PSI_EPS_0L1.Inp as communicated from the Bosch EPS fire detection system per existing requirements shall be used to determine this logic;</li> </ul> <p>Contacts will be connected to the L1 LSS as inputs and the LSS PLC will react to a fault by safely shutting down the lasers and instigating a controlled depressurization of the pneumatics and vacuum systems (the latter taking around 1 hour);</p>	<b>1.035 €</b>
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<p><b>Services included:</b></p> <ul style="list-style-type: none"> <li>Electrical Design</li> <li>Assembly of cabinets</li> <li>Installation of cabinets at Eli beamlines E1 hall (clean room)</li> <li>Software (HMI, PLC) development, test and commissioning</li> <li>Project Management, Procurement and Administration</li> </ul> <p><b>Material included:</b></p> <ul style="list-style-type: none"> <li>Electrical cabinet hardware             <ul style="list-style-type: none"> <li>3 Rittal cabinet 800x800x300mm)</li> <li>3 2711P-T15C22D9P PanelView Plus 7 Graphic Terminal</li> <li>3 440T-MSRUE11BL Trapped Key Interlock</li> <li>3 440T-MSRUE11BH Trapped Key Interlock</li> <li>1 1783-US4T1H Stratix 2000 4+1 unmanaged port switch</li> </ul> </li> </ul>	
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	<ul style="list-style-type: none"> <li>○ 1 1734-AENTR POINT I/O Dual Port Network Adaptor</li> <li>○ 3 1734-IB8S 8 Channel Sfty Sinking Inp Mod PN-25132</li> <li>○ 3 1734-OB8S 8 Channel Safety Sourcing Output Module</li> <li>○ 6 1734-TOP POINT I/O Terminal Base</li> </ul> <ul style="list-style-type: none"> <li>● Cables (12pcs/50m each. Metallic Ethernet connection is expected for HMI panel communication) and cable routes delivery (60m total or enlargement of existing cable routes)</li> </ul>	
	<b>Assumptions and Restrictions:</b> <ul style="list-style-type: none"> <li>● The design, panel build, installation and commissioning will be executed together with the regular E1 scope of supply.</li> <li>● No fiber optic cables delivery and pigtail welding on site</li> <li>● T&amp;M's of the DCR apply to contact "ELI: EXTREME LIGHT INFRASTRUCTURE – phase 2", # Project, Reg. No. CZ.02.1.01/0.0/0.0/15_008/0000162 (Personal Safety Interlock System)</li> </ul>	
<b>TOTAL</b>		<b>24.905 €</b>

**Notes:**

Project Impact Estimate			
Lost Time:		Labor	X
Schedule:	X	Expenses	
Other:		Material	X

<b>Offer Expires 30 Days from Date of Record</b> <input type="checkbox"/> Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Revise as Noted & Re-submit	<table style="width: 100%;"> <tr> <td style="text-align: right;"><b>DCR Value</b></td> <td style="text-align: left;"><b>24.905 €</b></td> </tr> <tr> <td colspan="2">Customer Notes:</td> </tr> <tr> <td colspan="2">1)</td> </tr> <tr> <td style="border-top: 1px solid black;">Customer Approval:</td> <td style="border-top: 1px solid black;">Date:</td> </tr> <tr> <td style="border-top: 1px solid black;">Rockwell Approval:</td> <td style="border-top: 1px solid black;">Date:</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: center;"> </td> <td style="border-top: 1px solid black; text-align: center;">24.10.2018</td> </tr> </table>	<b>DCR Value</b>	<b>24.905 €</b>	Customer Notes:		1)		Customer Approval:	Date:	Rockwell Approval:	Date:		24.10.2018
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