### WWW.CERN.CH/OPWT

## OP-WEBTOOLS

### **ABOUT MYSELF**

- 2001 Master in applied physic, University of Trento
- 2001 Technical Student: Thermal Conductivity of high temperature superconductors for the LHC current leads
- ▶ 2003 2014 BE/OP CPS Operator -> Shift Leader
- ▶ 2015 2018 BE/OP ISOLDE
- ▶ 2019 BE/ICS TI ?

### **OPWT IN NUMBERS**

- Created 10y ago to group OP web applications
- ▶ 2016 > 400.000 unique visitors
- ▶ 2017 > 90 Million pages served
- >20% outside CERN
- ▶ 16 applications

### **OPWT STACK**

- IIS 8.5 WEB Server managed by IT
- REST API PHP (custom classes)
- ORACLE Data Storage
- Swagger documentation
- VueJS frontend (Angular 1)
- Semantic UI component library



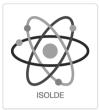










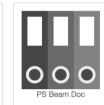
























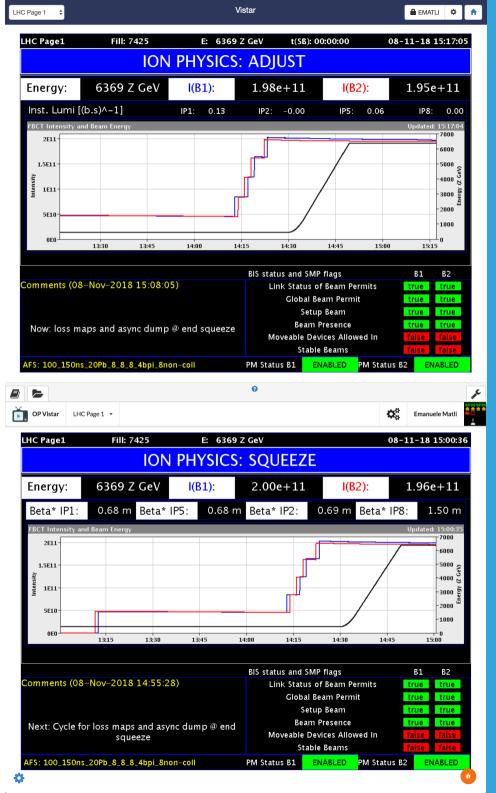














OPWT Style
VueJS
REST API
ORACLE Data Storage
Embed Option with router
Optimised mobile view

TO DO

Integration with User preferences: default, dropdown list...
Multiple Vistar per Page
Admin: New, Edit, Delete



### 08/11/2018 08:23

### DAY ISO GPS

FC4900: 450- 510 pA of 238U+16O mas factor = 1799.55

... but the beam is really off center on the focal plane.

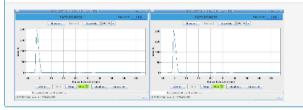
Beam recalibrated with slit in - +2 mm

slit in - 280-300pA slit out - 480-520pA

New mass factor: 1801.58

This needs to be rechecked once back to 229 Ac

/JG



### 08/11/2018 08:28

### Morning PS

BSW22 have the same problem as the last time due to water leak on electronic board They need minimum 2h to change it



### 08/11/2018 08:33

### **Morning PSB**

ResidentCycleServer: PSB THE TIMING USER PSB.USER.MD3 IS MAPPED WITH THE LSA CYCLE MD4263\_BCMS25\_2018\_PN\_1.5eVs\_DispFree\_optics.
For Fanouria.

### 08/11/2018 08:43

### **Morning PSB**

Simon of ISOLDE request to put HT room in access mode

### 08/11/2018 08:50

### DAY ISO HRS

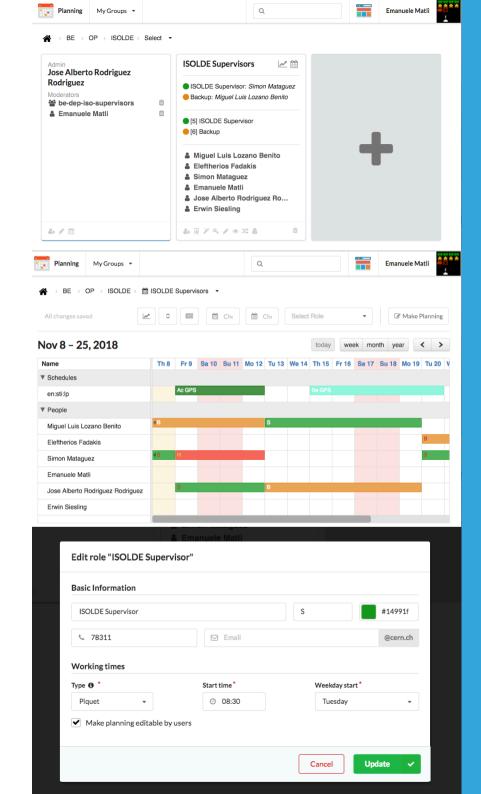
Short access to HT room to connect THERM1 correctly and to connect 5 noble gaz bottle in valve 2



## • E-LOGBOOK

# Multiple logbook in a single page Inline images Search SSO Authentication

New web application currently in development by OP, no plans for further development





### PLANNING

Replacement of Shift Planning and Piquet (APEX).

Generic application to schedule task for people.

Organise teams of people sharing "roles".

EDMS integration for OVT generation (via DB view)

Possible start-up by NTNU.

Several labs interested.

Testing phase with PSI.

Administrated by Jesper Nielsen

### Access

SUSI - Piquet ♪ 160218 ☆ ZORA - Piquet 1 **⊿** 168756 i Boris Morand ZORA - Piquet 2 **少** 160107 **i** Nino Rama Experts LHC **少** 164000 i Serge Di Luca Franck Schmitt **J** 160332 i Experts SPS Vitor Martins De Sousa ... **J** 168788 **i** Didier Vaxelaire **J** 162498 i Experts PS Didier Chapuis **J** 160949 i Boris Morand J 168756 i

During normal days, please call the experts

### **TE-EPC Piquet**

Injectors J 160391 C LHC And LHC Experiments J 161919 C SPS And Experimental Areas J 163668 C

### **EN-EL Responsibles**

LHC1 - LHC1.8 Responsible **少** 162131 i Bruno Saint Sulpice LHC2 - LHC3 - LHC4 Responsible Michael Simon Conway **J** 167875 i LHC5 - LHC6 Responsible David Robert Di Lazzaro J 162951 i LHC7 - LHC8 Responsible Andy Jose Nicolas Hamy **J** 164774 i SPS Responsible Denis Ribiollet **少** 169841 i BE - 400kV - 66kV Responsible **少** 160383 i Mickael Lonjon ME59 & West Area Responsible **⊿** 163750 i Jean Juillard ME9, ME10 & Admin responsible **少** 163750 i Jean Juillard Prevessin, CCC, BE91, NA Responsible **少** 160383 i Mickael Lonjon Meyrin: PS & 513 Responsible **J** 162720 i Patrick Rene Gallav

### Coordination EN-EL

 Coordination PS
 ೨ 165711 ♥

 Coordination SPS
 ೨ 164247 ♥

 Coordination LHC
 ೨ 161669 ♥

### **SMB Piquet**

SMB Dashboard

### TI Supervisor

TI Supervisor

② Ronan Ledru

→ 167928 i

### **EN-EL Piquet**

Op: Niveau 1 Pilote	
Denis Ribiollet	<b>少</b> 169841 <b>i</b>
OP Niveau 1	
Christophe Yvan Di Bisc	<b>少</b> 167824 <b>i</b>
Op: Niveau 1 Formation	
Jean-Philippe Vincent	<i>J</i> 167984 i
Controls: Controls piquet	
Anargyros Kiourkos	<b>少</b> 166391 <b>i</b>
Level 2 : Level 2 piquet	
Christian Marc Bernard	♪ 162286 i

EN-EL Dashboard

## × ×

## PLANNING DASHBOARD

Configurable visualisation of Planning data with up to date information of person on duty for a selection of "roles".

Stable Only Found 31 Elements, 7 Stable

### 88Ru Ruthenium

Half life: 1.3 s Atomic Number: 44 Mass: 87.9415992004 MassExcess: -54400 keV

### 89Ru Ruthenium

Half life: 1.5 s Atomic Number: 44 Mass: 88.9376163518 MassExcess: -58110 keV

### 90Ru Ruthenium

Half life: 11 s Atomic Number: 44 Mass: 89.930344164 MassExcess: -64884 keV

### 91Ru Ruthenium

Half life: 9 s Atomic Number: 44 Mass: 90.9267418867 MassExcess: -68239.5 keV

### 92Ru Ruthenium

Half life: 3.65 m Atomic Number: 44 Mass: 91.9202343844 MassExcess: -74301.2 keV

### 93Ru Ruthenium

Half life: 59.7 s Atomic Number: 44 Mass: 92.9171044665 MassExcess: -77216.7 keV

### 94Ru Ruthenium

Half life: 51.8 m Atomic Number: 44 Mass: 93.9113424332 MassExcess: -82584 keV

### 95Ru Ruthenium

Half life: 1.643 h Atomic Number: 44 Mass: 94.9104063028 MassExcess: -83456 keV

### 96Ru Ruthenium

Abundance: 5.54 %

### 97Ru Ruthenium

Half life: 2.8370 d Atomic Number: 44 Mass: 96.9075471327 MassExcess: -86119.3 keV

### <sup>98</sup>Ru Ruthenium

### 99 Ru Ruthenium

### EBIS Contaminants 3.88889 ± 0.02 Stable Only Found 1033 Elements, 69 Stable **Breeding Time** Reset zoom - 50ms 300 250 100 50

31p8+ Phosphorus

35CI9+ Chlorine

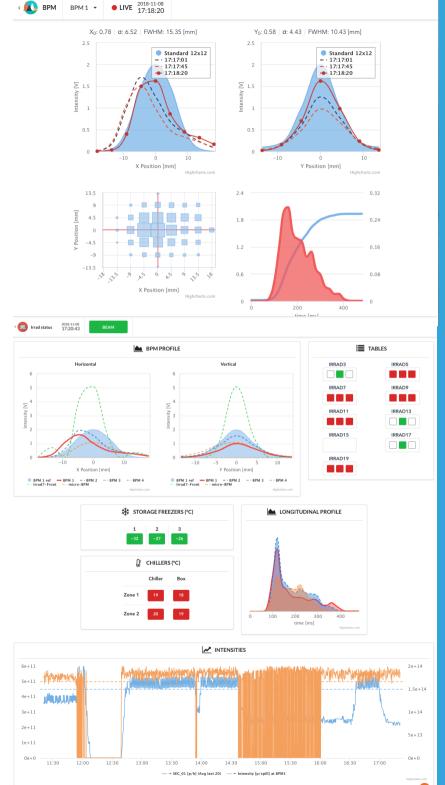
### <sup>39</sup>K<sup>10+</sup> Potassium

62Ni16+ Nickel

## > ISOLDE

Isotope Browser searchable periodic table of elements. Data from the International **Atomic Energy Agency (AIEEE)** 

**EBIS** contaminants interactive chart of REX EBIS contaminants with A/Q search and list of contaminants





"Low Latency" visualisation of data from the Beam Position **Monitors of the IRRAD Facility.** Custom HW + SW (JAVA) to acquire data and store in ORACLE.

**VueJS test projects – 2 Months** 



































## **ACCESS REQUEST**

Simple form to manage access requests in the accelerators during beam interruptions

Access Request TI ▼						Andr	eas Nes Kile
Search users	rs 📝 Phone Where 🔻 🗋 RP 🐧 Duration Enter description here				х		
Date	Requester	Phone	Location	Time	Description	RP	Delete
08 November 2018	Andreas Nes Kile [BE/OP]	+47622457	ISOLDE CC	23m	test	No	
01 November 2018	Gianluca Usai [EP/UFT]	+41227671028	ATLAS TUNNEL	5m	grvefdw	No	î
01 November 2018	Pedro Vieira De Castro Ferreira Da Silva [EP/CMG]	+41754114169	ATLAS TUNNEL	3m	fedwcrec	No	Î
01 November 2018	Andreas Nes Kile [BE/OP]		ISOLDE CC	32m	test	No	î
01 November 2018	Emanuele Matli [BE/OP]	+41754117813	ISOLDE CC	3m	dfghjkl	No	î
01 November 2018	Andreas Nes Kile [BE/OP]		ISOLDE CC	32m	testgres	No	â
31 October 2018	Andreas Nes Kile [BE/OP]	+47622457	ATLAS TUNNEL	23m	Testdescription	No	î
31 October 2018	Andreas Nes Kile [BE/OP]	+12345	ATLAS TUNNEL	270m	werty	Yes	î
31 October 2018	Andreas Nes Kile [BE/OP]	+123456	ATLAS TUNNEL	32m	qwertyuoip	No	Î
31 October 2018	Andreas Nes Kile [BE/OP]	+123456	ATLAS TUNNEL	3m	qwertyuoip	No	î
31 October 2018	Kilian Schwarz [EP/UAI]	+123456	ATLAS CC	60m	testdescription	No	î
31 October 2018	Andreas Nes Kile [BE/OP]	+123456789	ISOLDE CC	25m	test	No	î
22 October 2018	Andreas Nes Kile [BE/OP]	+12345345	ISOLDE CC	12m	This is a description 2	Yes	â
22 October 2018	Andreas Nes Kile [BE/OP]	+1234	ISOLDE CC	12m	This is a description	Yes	â



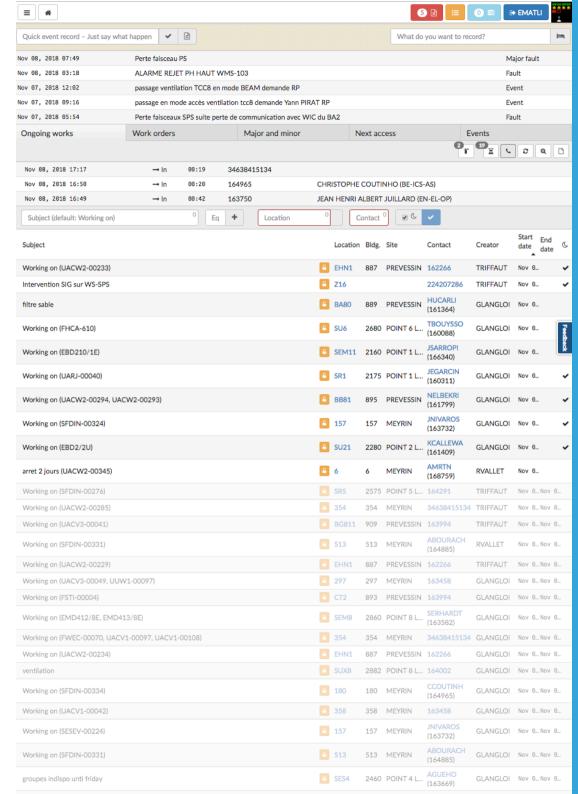
Emanuele Matli



Caller	Called	Deliver Time	Duration
34638415134	72201	08.11.2018 17:17:08	00:19
Christophe Coutinho (BE-ICS-AS)	72201	08.11.2018 16:50:01	00:20
Jean Juillard (EN-EL-OP)	72201	08.11.2018 16:49:31	00:42
Arif Avanoglu (EN-CV-INJ)	72201	08.11.2018 16:45:43	00:55
163458	72201	08.11.2018 16:29:11	00:37
12570461	Alexis Freze (EN-CV-INJ)	08.11.2018 16:26:55	00:47
12570461	Jean-Marie Vuaillat (EN-CV-INJ)	08.11.2018 16:24:17	00:03
163994	72201	08.11.2018 16:22:26	00:24
Alexandre Pascal Putzu (EN-CV-LHC)	72201	08.11.2018 16:19:42	01:46
Anne-Laure Pietrzak (BE-ICS-AS)	72201	08.11.2018 16:15:39	00:21
12570461	Alexandre Pascal Putzu (EN-CV-LHC)	08.11.2018 16:13:49	01:25
Halil Ucarli (EN-CV-OP)	72201	08.11.2018 16:04:40	00:31
Thomas Bouyssou (EN-CV-OP)	72201	08.11.2018 15:43:35	00:21
Pascal Pignereau (IT-EXT-SFM)	72201	08.11.2018 15:20:57	01:21
12570461	Alexis Freze (EN-CV-INJ)	08.11.2018 15:16:07	00:46
Vincent Sebastien Julien (BE-ICS-AS)	72201	08.11.2018 15:14:57	00:21
160168	72201	08.11.2018 15:04:30	00:48
Cedric Fournier (EP-LBO-DO)	72201	08.11.2018 15:04:17	Not answered
Thierry Olivier (EN-HE-HH)	72201	08.11.2018 15:03:53	01:30
12570461	Jean Juillard (EN-EL-OP)	08.11.2018 15:00:36	01:23
164002	72201	08.11.2018 14:49:12	00:32
Vincent Sebastien Julien (BE-ICS-AS)	72201	08.11.2018 14:45:22	00:28
Kevin Grenier (EN-ACE-COS)	72201	08.11.2018 14:36:42	01:24
12570461	Mickael Lonjon (EN-EL-OP)	08.11.2018 14:35:54	00:46
Hassane Sabri (EN-CV-INJ)	72201	08.11.2018 14:30:38	01:17
162266	72201	08.11.2018 14:21:53	00:30
David Robert Di Lazzaro (EN-EL-OP)	72201	08.11.2018 14:19:55	00:32
34638415134	72201	08.11.2018 14:18:09	00:35
163994	72201	08.11.2018 14:11:19	00:32
	72201	08.11.2018 14:02:23	00:37
34638415134			
162266	72201	08.11.2018 13:49:24	00:42
Anne-Laure Pietrzak (BE-ICS-AS)	72201	08.11.2018 13:48:22	00:20
163458	72201	08.11.2018 13:30:46	00:48
72201	Hassane Sabri (EN-CV-INJ)	08.11.2018 13:25:15	05:51
Gregory Smith (BE-ICS-AC)	72201	08.11.2018 11:58:42	00:34
163994	72201	08.11.2018 11:49:37	00:20
77423	72201	08.11.2018 11:36:31	00:17
72201	Alexandre Fournier (EN-CV-OP)	08.11.2018 11:32:23	00:29
Pascal Pignereau (IT-EXT-SFM)	72201	08.11.2018 11:28:54	03:03
Anne-Laure Pietrzak (BE-ICS-AS)	72201	08.11.2018 11:22:56	00:10
Alexandre De Oliveira (BE-ICS-AC)	72201	08.11.2018 11:18:46	01:16
34638415134	72201	08.11.2018 11:17:27	00:37
Evelin Meoni (EP-UAT)	72201	08.11.2018 11:14:22	01:45
Charline Ranaudo (SMB-SE-HE)	72201	08.11.2018 11:07:40	00:57
<b>†</b> 72201	Alexis Freze (EN-CV-INJ)	08.11.2018 11:06:43	00:30



List of incoming/outgoing calls for CCC. Recently updated after upgrade of telecom services. **Shared code with TI** Logbook.





## TI LOGBOOK

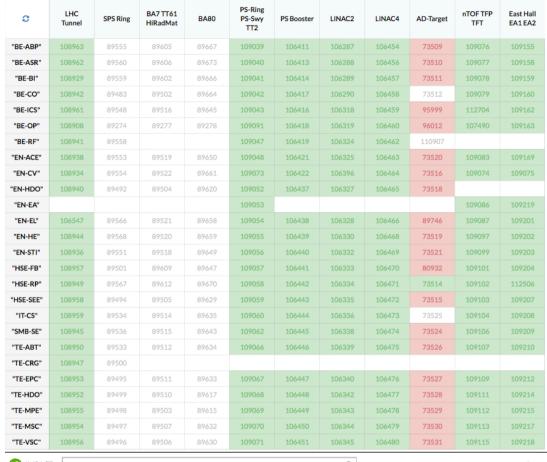
**Used 24/7 by TI operators** Integrates/interacts with many external services and data sources (ticketing, telecom, IMPACT, EDMS, AFT, Logbook, alarms...) via DB view, DB procedures, SOAP, REST. ElasticSearch...

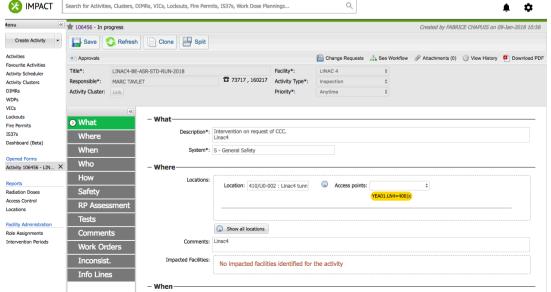
PHP + Angular 1













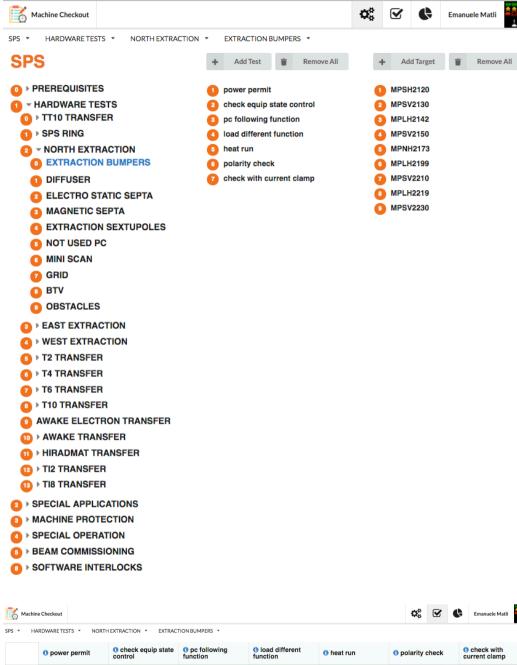
Simplified Matrix view of **OP** related IMPACTS with with single-click **Interrupt / Activate with** service account via the IMPACT API.

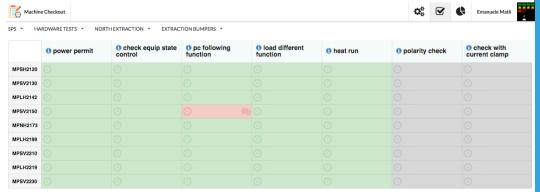
,		PC Management 1001	EMAIL
∧ Search			
Surname:Matli Q			
DeviceName:	Surname:		
Location:	FirstName:		
OutletID:	PersonID:		
SerialNumber:	ResponsibleDepGroup:		
Tag:	UserResponsibleDepGroup:		
InventoryNumber:	OperatingSystem:		
		Search	
✓ Results			

•				PC Management Too	ol	A	EMATLI
~	Search						
^	Results						
<b>\$</b>	DeviceName •	Tag +	Model +	User +	Responsible \$	Description	
1	BORGE-LAPTOP		LENOVO THINKPAD X1 CARBON	NIELSEN BORGE SVANE	NIELSEN BORGE SVANE		20
1	FLOHRLAPTOP		UNKNOWN UNKNOWN	NIELSEN CHRISTIAN FLOHR	NIELSEN CHRISTIAN FLOHR		201
1	JESPER-IPHONE-XS		UNKNOWN UNKNOWN	NIELSEN JESPER	NIELSEN JESPER		20
1	LCNIE		UNKNOWN UNKNOWN	NIELSEN LEONARD	NIELSEN LEONARD		20
1	LNIELSEN-XS		UNKNOWN UNKNOWN	NIELSEN LARS HOLM	NIELSEN LARS HOLM		20
1	NA63		UNKNOWN UNKNOWN	NIELSEN CHRISTIAN FLOHR	NIELSEN CHRISTIAN FLOHR		20
1	HGHGVDGCFVH		UNKNOWN UNKNOWN	NIELSEN DANIEL STEFANIAK	NIELSEN DANIEL STEFANIAK		20
1	JESPERVMWIN	OPENSTACK VM	KVM VIRTUAL MACHINE	NIELSEN JESPER	NIELSEN JESPER		201
1	KRISTOFFERBESTED		UNKNOWN UNKNOWN	NIELSEN KRISTOFFER BESTED	NIELSEN KRISTOFFER BESTED		20
7	LARS-IPHONE7		UNKNOWN UNKNOWN	NIELSEN LARS HOLM	NIELSEN LARS HOLM		20
,	LNIELSEN-MBP15		APPLE MACBOOK PRO 15	NIELSEN LARS HOLM	NIELSEN LARS HOLM		20
1	MACBE16788	BE-OP-OFFICE-TI	APPLE MACBOOK PRO 15 2.8GHZ	NIELSEN JESPER	BTE-ADM E-GROUP	MAG:695920	20
1	MOBILE-2939	BE-OP-OPERATION	SIEMENS PLC	NIELSEN JESPER	MASRIE SABRI	SIM FOR REMOTE SENSOR BOX FOR BE-OP-	TI 20
1	CWO-CCC-C7LF	BE/CO	DELL INC. OPTIPLEX 9020	NIELSEN JESPER	ACC-CONSOLE-RESPONSIBLE E-GROUP	TI LINUX CONSOLE ON THE TABLE 7 - 3 SCRE	EENS 20
1	CWO-CCC-C7LS	BE/CO	DELL INC. OPTIPLEX 9020	NIELSEN JESPER	ACC-CONSOLE-RESPONSIBLE E-GROUP	LHC LINUX CONSOLE ON TABLE 7	20
1	CWO-CCC-C8LS	BE/CO	DELL INC. OPTIPLEX 9020	NIELSEN JESPER	ACC-CONSOLE-RESPONSIBLE E-GROUP	LHC LINUX CONSOLE ON TABLE 8	20
1	JESPERPC10		UNKNOWN UNKNOWN	NIELSEN JESPER	NIELSEN JESPER		20
1	SISSEL		UNKNOWN UNKNOWN	NIELSEN SISSEL BAY	NIELSEN SISSEL BAY		20
1	SOFIEPC		UNKNOWN UNKNOWN	NIELSEN SOFIE TILBAEK	NIELSEN SOFIE TILBAEK		20
1	SOFIETLF		UNKNOWN UNKNOWN	NIELSEN SOFIE TILBAEK	NIELSEN SOFIE TILBAEK		201
1	TELEPHONE-71807		HP 4120	TILBAEK	NIELSEN JESPER		20
1	ATV-GLASSBOX		APPLE TV	NIELSEN JESPER	NIELSEN JESPER		20
7	CWO-CCC-C5LS	BE-OP-OPERATION	HP HP ELITEDESK 800 G2 TWR	NIELSEN JESPER		TI LINUX CONSOLE ON TABLE 5 WITH 2 WALL	- 20
•	FGFDGDGFDGD		LENOVO Y50-70	NIELSEN DANIEL	E-GROUP NIELSEN DANIEL STEFANIAK	SCREENS	20
Š	JESPERIPHONE6		APPLE IPHONE 6	STEFANIAK NIELSEN JESPER	NIELSEN JESPER		20
	PCBE16152	BE-OP-OPERATION	DELL INC. OPTIPLEX 9020	NIELSEN JESPER	BTE-ADM E-GROUP	TI CONSOLE FOR PSEN, LASER, TIM ON	20
Š	TELEPHONE-73780		HP 4120	NIELSEN JESPER	NIELSEN JESPER	TECHNICAL NETWORK TI OFFICE PHONE	20
Š	JESPERPHONE		SAMSUMG GALAXY	NIELSEN JESPER	NIELSEN JESPER		20
7	LNIELSEN		APPLE IPHONE 6	NIELSEN LARS HOLM	NIELSEN LARS HOLM		20
7	RASPBERRYNIELSEN2	BE-OP-PRIVATE	RASPBERRY PI B	NIELSEN JESPER	NIELSEN JESPER		20
7	TELEPHONE-70440	BE/OP	ALCATEL IP TOUCH 4028		NIELSEN JESPER		20
7	TIOPS4		SANSUNG GT-P3110	NIELSEN JESPER	NIELSEN JESPER	TIOP PHONE	20
1	CWO-65-TIOP1	BE/CO	HEWLETT-PACKARD HP COMPAQ	NIELSEN JESPER	ACC-CONSOLE-RESPONSIBLE	TI LINUX CONSOLE	20
1	CWO-65-TIOP2	BE/CO	ELITE 8300 SFF HEWLETT-PACKARD HP COMPAQ	NIELSEN JESPER	ACC-CONSOLE-RESPONSIBLE	TI LINUX CONSOLE	20
1	CWO-65-TIOP3	BE/CO	ELITE 8300 SFF HEWLETT-PACKARD HP COMPAQ	NIELSEN JESPER	ACC-CONSOLE-RESPONSIBLE	TI LINUX CONSOLE	20
	CWO-65-TIOP4	BE/CO	ELITE 8300 SFF DELL INC. OPTIPLEX 7050	NIELSEN JESPER	E-GROUP ACC-ADM E-GROUP	TI WINDOWS CONSOLE	201
X	CWO-CCC-COLE	BE-OR-OPERATION	DELL INC OPTIDLEY 9020	NIELSEN JESPED		TILINIX CONSOLE ON THE TABLE O	20-



Interface to
NetworkServices via
SOAP service.
Used to manage PCs in
OP groups.







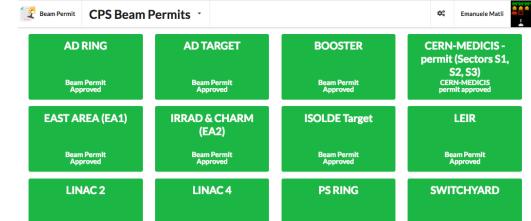
Interface to manage test to be performed before start up of accelerators.

Test+Targets organised in tree like structure.

ASM integration (via DB view) for planning.

Improvements for LS2 to be discussed with re-commissioning coordinators.

**Interest from Los Alamos Neutron Science Center (LANSCE)** 

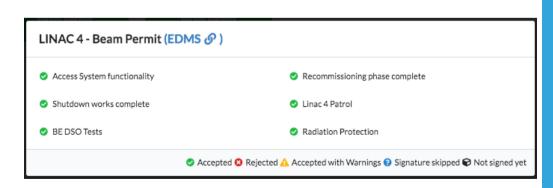


Beam Permit

Beam Permit

**nTOF TARGET** 

Beam Permit Approved





## BEAM PERMIT

### **Display status of EDMS** Safety documents for **Beam/Hardware Permits**

Beam Permit

Beam Permit

TT2 & nTOF

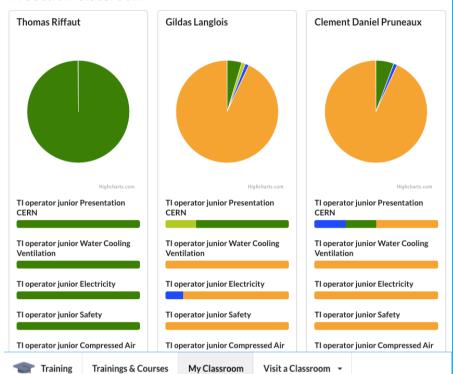
**Primaire** 

Beam Permit Approved

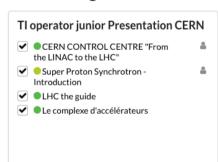


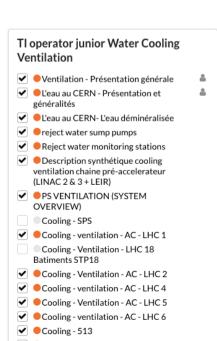
My Classroom

### TI section Classroom



### **Gildas Langlois**





## TRAINING **Documents stored in EDMS.** Courses grouped in trainings. "Teacher" assignes trainings or individual courses to trainee(s), sets deadlines, assigns validators to approuve training (optional) and follows progress.

CONDAMNATION DA Q	All Machines +	All Complex   ▼	All Buildings
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193
12-NOV-18	ELENA	MEYRIN	193



## CONSIGNATION

Searchable table displaying informations about the "consigned" electrical elements. Data provided by EPC. **GIS** integration for rack localisation.





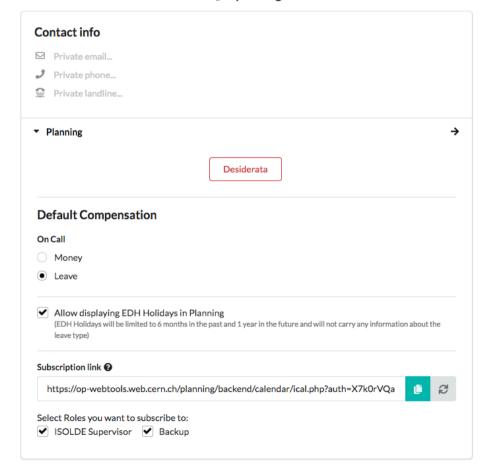




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**♥** My Settings



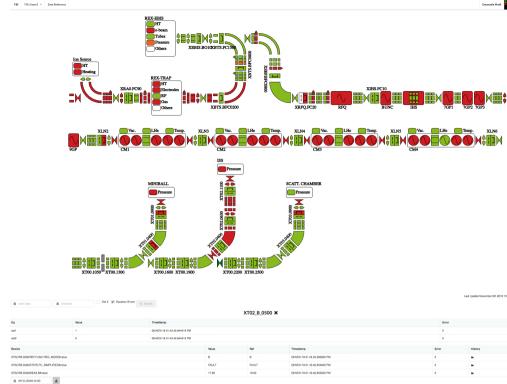
## PREFERENCES

General preferences (private phone, picture...) required by GDPR.

Planning application.

TODO

Vistar Logbook



### "view":{"name":"FBI\_LINAC1"}, "defaults":{ "DX":15, "TYPE": "generic", "REF": "previous", "comment": {"comment": "selectelesteleteteleteteleteteleteteleteteleteteleteteleteteleteteleteteletete 'vac\_rex\_SEP10\_VVS1\_FBI": { "svg":{"TYPE":"valve","XY":[2000,500]}, "v": ["vac.rex.SEP10\_VVS1/StsReg01#value"], "oot1":"(v(0)&3)==2" "svg":{"TYPE":"bdb02"}, "v":["XRFQ.SL20/Position"], "oot2":"v(0)!='5mm'" 'svg":{"TYPE":"bdb01","DX":0,"LABEL":"XRFQ.FC20","LABEL\_DXY":[-100,100]}, "v": ["XRFQ.B030\_XRFQ.FC20/FcPosition#fcPosition","XRFQ.B030\_XRFQ.FC20/BpmsMspPosition#bpmsMspPosition"] "oot1":"v(0)!=0UT",

# FBI: FAST BEAM INVESTIGATION

SCADA like interface to monitor ISOLDE and HIE.

Configuration "Master" file (JSON).

Programmatic generation of SVG (Mathlab) and DB configuration: devices to subscribe and rules to compute icon status (JAVA)