

LINAC ACTIVITIES 2021-2022

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LINAC SERVICE ACTIVITIES 2021 2022

- LINAC-DAFNE-BTF

- LINAC

- RUN DAFNE (02-Feb-2021--- up to ...)
 - Ordinary Maintenance:
 - Modulators
 - LINAC auxiliary
 - Extraordinary Maintenance and consolidation
 - Vacuum pump PS Substitution,
 - UFS Power supplies
 - Quadrupoles Power supplies
 - Correctors Power supplies
 - Modulator Consolidation:
 - Solid State Power supplies in Mod A and C
 - Upgrade
 - Building and install of new modulator
 - Test Solid CERN state Switch on new Modulator

- BTF

- BTF2 Safety
 - BTF2 Installation and commissioning
 - ERAD project

- SPARC

- Modulator Maintenance
 - Safety Check

- SABINA

- Sostituzione Mod banda C a SPARC
 - Sostituzione acc. Direzionali in guida
 - Studio sostituzione HVPS K1 K2 PLC?

- TEX (LATINO)

- Safety installation and Check
 - Klystron commissioning and TEST
 - Modulator SAT

- SINGULARITY

- LINAC CONTROL Memcached DATA and AI feedback test

- EUPRAXIA

- Integration WA
 - RF Power WP12

- TUAREG

Ordinary Maintenance: 1) Modulator

	Annual	6 months	3 month	month
Focus p.s.	M			C
Variac kly Fil.	M			C
Variac BIAS	M			C
Trasf. kly FIL.	M		C	
Trasf. BIAS	M		C	
Inductors PFN		C		
Capacitors PFN		C		
Cables PFN			C	
Interlock relais	M			
SCR fuse		M		
Controls relais	C			
Charging diodes	M		C	

	Annual	6 months	3 month	month
H.B. Diode	M	C		
Charg. Inductor	M			
Charg. Capacitors	M		C	
Thy FIL. Trasf.	M		C	
Thy Res. Trasf	M		C	
Thy. Trigger	M	C		
Thy cooling FAN		C		
Thy Values				M
Oil in the tanks	M		C	
Vk Ik measure		M		
EOL Clipper		M		C
Mod. FAN			C	

C= Check M=Maintenance

Ordinary Maintenance: LINAC Auxillary

	Annual	6 months	3 month	month
SLED water/ T	M		C	
Kly cooling	M			C
Tank cooling	M			C
Fire safety syst.	M	C		
Control PCB			C	
Linac Timing		C		
LLRF source		C		
LLRF booster		C		
Rf diode calib	M			
Safety		M		
Linac Termal isp.		M		

	Annual	6 months	3 month	month
Pos Mod. Thy	M		C	
Pos Mod. FAN				
Magnets P.S.	M		C	
GUN PS	M			
WCM	M		C	
BPM		C		
Odoscope				M
HVPS oil pressure				
HVPS cables		M		C

C= Check M=Maintenance

LINAC ORDINARY MAINTENANCE:

COSTS per year:

140K: 4x thyratrons (~4000h/thy./mod)
100k (HV resistors capacitors, llrf components, waveguide components)
50k Electric and Electronics components
100k Klystron/year
20k cooling elements (modulator collectors)
50k controls and instruments

LINAC MAN POWER:

4 Tecnici 15 working days
3 Tecnologi 15 working days

DA Requests:

- Support from Magnet and Diagnostics Services
- Support from Control Services
- Support from Vacuum Services

DT Request:

1 Idraulic Staff 15 days
1 electric staff for 15 days

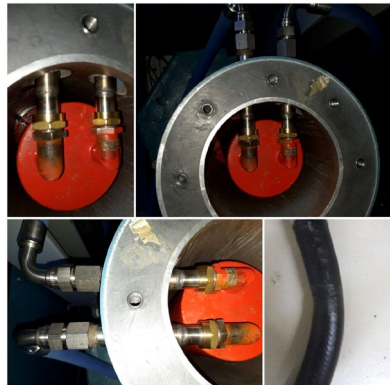
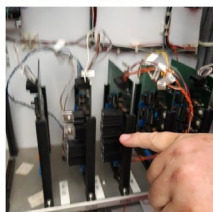
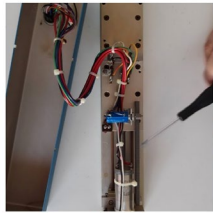
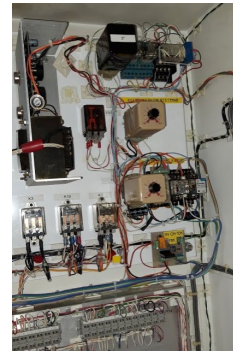
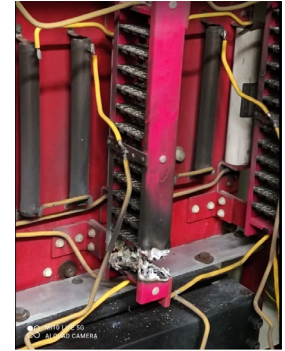
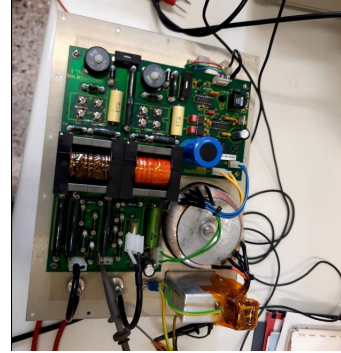
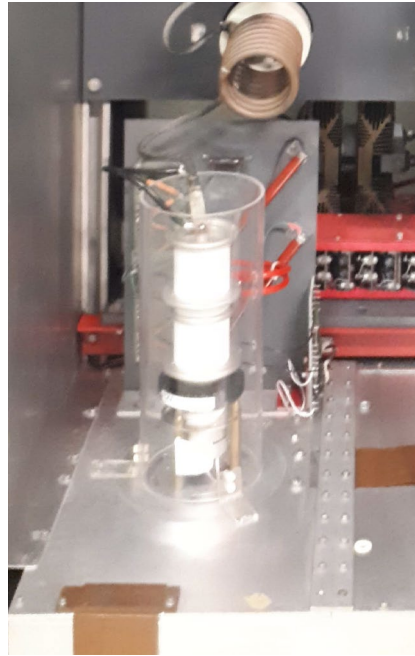
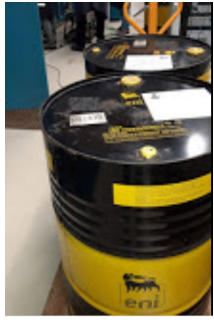
FISMEL Request

1 Staff for Radio Protection Control

RSPP Request

Fire Safety Check for Modulators

LINAC MAINTENANCE Examples (2019-2020)



Extraordinary Maintenance and consolidation

➤ Vacuum pump PS Substitution

➤ Mod C Done, actually 8 pump new on the total of 44 Ion pump to be substituted after 25 year

➤ DA Requests: Vacuum Service, FISMEI, RSPP, Mecchanics

➤ DT Requests: Idraulic and electric services

HARDWARE ETIMATED COSTS: 40k/ year
8 pumps x years for the next 5 year

➤ UFS Power supplies

➤ To be installed in 2021

➤ DA Requests: Magnets Servics, Control Service (+Network)

➤ DT Requests: Idraulic and electric services

HARDWARE COSTS: Payed.

➤ Quadrupoles Power supplies

➤ To buy spare elements that are finished:

➤ DA Requests: Magnets Service, Mecchanics

➤ DT Requests: electric services

HARDWARE ESTIMATED: ~8kEuro x 5P.S. = 40k

➤ Correctors Power supplies

➤ Broken, no spare elements to buy

HARDWARE ESTIMATED: ~3kEuro x 44P.S. = 132k
(~30k x 4 Years)

Modulator Consolidation

- Mod C
 - Install Solid state Power supply (15 days)
 - DA Request:
 - DT Requests: Idraulic and elettric services
- Mod A
 - Install 15:1 Pulse trasformer (4 days) and new PFN (7 days)
 - Install Solid state Power supply (15 days)
 - DT Requests: Idraulic and elettric services

HARDWARE COSTS: Most Payed.

TIME NEEDS: 4 LINAC-FTE 2 Months

Upgrade

- Commissioning of S band modulator
 - DA Requests: Mecchanic Service
 - DT Requests: Idraulic Service, Electric Service

HARDWARE COSTS: ~10kEuro to finish

TIME NEEDS: 4 LINAC-FTE 6 Months

- Test Solid State switch from CERN
 - DA Requests: Diagnostic Service
 - DT Requests: Electric Service

HARDWARE COSTS: Expedition From CERN

TIME NEEDS: 4 LINAC-FTE 2 Months

- Study on new thyatron power supply circuit similar CX1836
 - DA Requests: Diagnostic Service
 - DT Requests: Electric Service

HARDWARE COSTS: ~10kEuro + 30kEuro (Thy)

TIME NEEDS: 4 LINAC-FTE 2 Months

- Study on new ELBOW Solution

HARDWARE COSTS: ~30KEuro

TIME NEEDS: 6 Months

- To Buy new S band SLED
(LINAC_DAFNE, SPARC??)

HARDWARE COSTS: ~85+IVA KEuro

TIME NEEDS: 12 Months

BTF2 Safety

- Commissioning of BTF2 Safety
 - DA Requests: Control Service Mechanical Service
 - DT Requests: Engineering Service, Electric Service,
 - FISMEL AND RSPP Safety Procedure request

HARDWARE COSTS: ~5KEuro

TIME NEEDS: 2 Months

BTF2 Commissioning

- Commissioning of BTF2
 - DA Requests: Control Service, Mechanical Service, Magnet Service, Diagnostic Service
 - DT Requests: Electric Service, Hydraulic Service, Engineering Service
 - FISMEL AND RSPP

VEDI PRESENTAZIONE BTF (L. G. FOGGETTA)

ERAD Projects

- Commissioning of High Intensity beam test in BTF1
 - DA Requests: Diagnostic Services, 30 day dedicated beam time, Secretary
 - FISMEL Check irradiated material
 - RSPP : Access Procedure for External Company

HARDWARE RESOURCE: +600k from LAEROSPAZIO

HUMAN RESOURCE +160k from LAEROSPAZIO

TIME NEEDS: ~ 2 Months beam +22 month project doc.