

# **Beam Wire Scanner for PSB**

**- Update**

*21-April-2016*

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**BE-BI-ML**

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- **Motors (Status by 21-Apr-2015)**
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# Status of motors

1. First prototype tests are under way (standard rotor, stator 600V). ***Do we have any test results?***
2. Vacuum compatible rotor validation:
  - High outgassing of the rotor received from Alxion;
  - Cleaning done – no change;
  - Bake-out 48h, 235 °C – outgassing is ok, report preparation is under way;
  - PM sample received from Alxion for validation;
  - Cleaning is planned, if high outgassing – bake-out.
3. Three motors (vacuum compatible rotor, stator 300V) order: DAI 6363752, under approval in purchasing.

# Optical Disk

1. 2 samples have been produced: 1 by LASERTEC (NL), arrived at CERN, 1 by Dundee University (on it's way)
2. MME-MA (Pierre Naisson) is in charge of production of 3 full-size optical disks for beam wire scanners:
  - raw material will be received by end of April;
  - diamond tool has been purchased (machining of optical track);
  - production of three disks by end of May.

# Production Status

## Parts or subassemblies being produced in main workshop or subcontracted (EN-MME)

Definition	Nomenclature	Quantity	Responsible Group/Section	Supplier	Status
INNER SHOULDERED HUB	PSBBWSRA0013	3	MME-FS	MIKROMEKANIKK	In production
<b>STEPPED VACUUM CHAMBER ASSEMBLY</b>	PSBBWSRA0025	3	MME-FS	CERN WORKSHOP	Preparation done
SHAFT	PSBBWSRA0010	3	MME-FS	MIKROMEKANIKK	In production
NUT FOR OPTICAL DISC	PSBBWSRA0023	3	MME-FS	MIKROMEKANIKK	In production
SPECIAL NUT	PSBBWSRA0019	3	MME-FS	MIKROMEKANIKK	In production
BEARINGS SPECIAL NUT	PSBBWSRA0020	3	MME-FS	MIKROMEKANIKK	In production
BACK SUPPORT	PSBBWSRA0012	3	MME-FS	MIKROMEKANIKK	In production
SHAFT END	PSBBWSRA0011	3	MME-FS	MIKROMEKANIKK	In production
SPECIAL NUT	PSBBWSRA0003	3	MME-FS	MIKROMEKANIKK	In production
THIN NUT 0.5d M16X1	PSBBWSRA0040	3	MME-FS	MIKROMEKANIKK	In production
RING $\varnothing 20.2/\varnothing 28/4.8\text{mm}$	PSBBWSRA0015	3	MME-FS	MIKROMEKANIKK	In production
BLOCKING WASHER	PSBBWSRA0024	3	MME-FS	CERN WORKSHOP	Preparation done
WASHER	PSBBWSRA0021	3	MME-FS	MIKROMEKANIKK	In production
FEEDTROUGH COVER	PSBBWSRA0018	3	MME-FS	MIKROMEKANIKK	In production
WASHER SHIM FOR BEARINGS	PSBBWSRA0022	3	MME-FS	CERN WORKSHOP	Preparation done
SPECIAL TAB WASHER	PSBBWSRA0032	3	MME-FS	CERN WORKSHOP	Preparation done
OPTICAL DISC PROTECTION	PSBBWSRA0014	3	MME-FS	MIKROMEKANIKK	In production
DN16 HALF-RING WITH THREADED HOLE	PSBBWSRA0031	3	MME-FS	CERN WORKSHOP	Preparation done
MODIFIED ROTATABLE RING DN16	PSBBWSRA0002	3	MME-FS	CERN WORKSHOP	Preparation done
BEARING EXTERNAL RING	PSBBWSRA0004	3	MME-FS	MIKROMEKANIKK	In production
resolver stopper	PSBBWSRA0016	3	MME-FS	MIKROMEKANIKK	In production
Break rotor	PSBBWSRA0017	3	MME-FS	CERN WORKSHOP	Preparation done
BRAKE STATOR RING	PSBBWSRA0037	3	MME-FS	CERN WORKSHOP	Preparation done
<b>MAIN VACUUM TANK</b>	PSBBWSRA0006	2	MME-FS	CERN WORKSHOP	Preparation done
TARGETS SUPPORT	PSBBWSRA0030	1	MME-FS	CERN WORKSHOP	Preparation done

*According to Emilien the cost (3 kinematic units + 2 vacuum tanks) ~ 75 kCHF*

# Production Status

## Parts or subassemblies being produced or subcontracted (BI-ML)

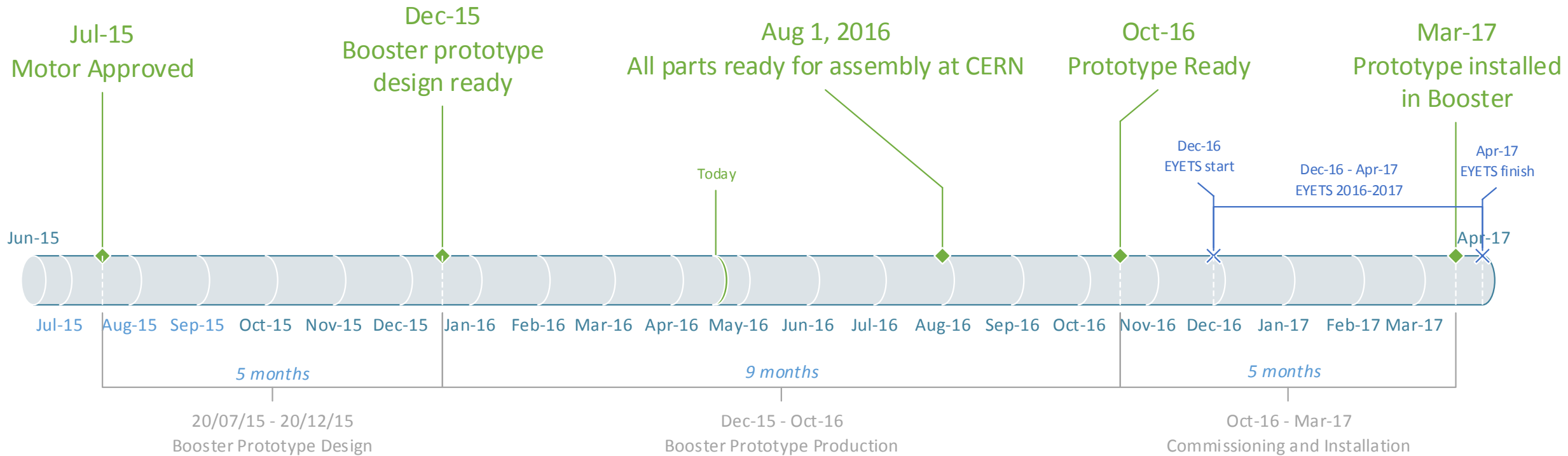
Definition	Nomenclature	Quantity	Responsible Group/Section	Supplier	Status
FORK D L150 MM	PSBBWSRA0044	10	BI-ML	Price inquiry	To be ordered
FORK BACK HALF CLAMP	PSBBWSRA0047	6	BI-ML	Price inquiry	To be ordered
Insulator Sleeve	PSBBWSRA0045	6	BI-ML	Price inquiry	To be ordered
Sleeve	PSBBWSRA0046	6	BI-ML	Price inquiry	To be ordered
BRAKE MAGNET	MR28.5xr25.2xh18xA81.5	10	BI-ML	HKCM ENGINEERING E.K	To be ordered
BEARING $\varnothing 37/\varnothing 25-7$	6805	6	BI-ML	Price inquiry	To be ordered
BEARING $\varnothing 65-\varnothing 50-7$	61810	10	BI-ML	Price inquiry	To be ordered

## Commercial parts (not including fasteners)

Definition	Nomenclature	Quantity	Responsible Group/Section	Supplier	Status
FIBER ADAPTER	SM05FCA	12	BI-BL	THORLABS	To be ordered
ADJUSTABLE FOCUS TUBE	PSBBWSRA0034	15	BI-ML	THORLABS	To be ordered
NUT	SM05RR-UNADONIZED-SP	50	BI-BL	THORLABS	To be ordered
<b>LENSES</b>		24	BI-BL	ASPHERICON	To be ordered
MOTOR STATOR	145STK2M022	3	BI-ML	ALXION	To be ordered
MOTOR ROTOR	145STK2M022	3	BI-ML	ALXION	To be ordered
DN16 VIEWPORT	VPCF16DUVQ-L	15	BI-BL	VACOM	To be ordered
VENTED WASHER	125AVTAQ0040000	100	BI-ML	JEVEKA	To be ordered
VIEWPORT DN100	VPCF100B-L	3	BI-ML	VACOM	To be ordered

+ fasteners

# Beam Wire Scanner Prototype for PSB. Schedule



EYETS Extended Year End Technical Stop

# Conclusions and questions + AOB

1. MME (Nicolas) was asked to start working on the design of vacuum tanks for PS and SPS version of BWS. We need BC.
2. Supporting structure for installation in PSB has been ordered.
3. Supporting plate design and installation tooling design is nearly finished, production will be planned soon.
4. It is planned to build a mock-up to train before the installation in the PSB.

