



LHC Injectors Upgrade

**LIU Wire Scanner Milestones
June 2017**





Recent meetings with LIU on wire scanners

Production readiness review for mechanics on 29/3/17

- <https://indico.cern.ch/event/618262/>
- Open issues on budget and operational precision
- Green-light from impedance and vacuum

Wrap-up meeting for the review on 2/5/17

- <https://indico.cern.ch/event/573340/>
- Followed-up on questions raised in the review
 - Budget issue resolved with additional support from LIU and CONS
 - Latest data from calibration and operation with beam analysed and presented
- Agreed to go-ahead with mechanics series production
- Minutes at: <https://edms.cern.ch/document/1811259/1>

Meeting with BI and S.Prodon 9/5/17

- Agreed on EVM implementation and budget codes



Implementation in EVM

12 LIU codes

- Compromise between ease of reporting for LIU and for BI
- Each machine has 2 codes for mechanics, 1 for control, 1 for acquisition and cables

+1 code for CONS (**64224**)

- Prioritise for 2017 spending

Status

- Codes are created and being used
- Spending profile now finalized for introduction into EVM

LIU-PSB mechanical production and installation	64024	45%
LIU-PSB acquisition electronics and cables	64026	
LIU-PSB mechanical commercial components	64028	
LIU-PSB control electronics	64027	
LIU-PS mechanical production and installation	64036	35%
LIU-PS acquisition electronics and cables	64037	
LIU-PS mechanical commercial components	64038	
LIU-PS control electronics	64039	
LIU-SPS mechanical production and installation	64047	25%
LIU-SPS acquisition electronics and cables	64048	
LIU-SPS mechanical commercial components	64049	
LIU-SPS control electronics	64058	



Status of prototypes

SPS

- 'Intermediate' instrument design, installed in LS1
- Currently being used in parasitic beam operations using 'development kit' controller
 - Improvements to acquisition filters have solved signal saturation issue
- Benchmarking beam size measurements with linear scanners

PSB

- 'Quasi-final' instrument design installed in EYETS 16-17
- Preparations in progress for operations using development kit controller
 - First operations with beam, Summer 2017
- Will make benchmarks with operational scanners
- Laboratory scanner is being used for calibration tests

PS

- Production of instrument mechanics in-progress, plan to install YETS 17-18
- Plan to use with final prototype control electronics and low-level software for 2018 operation



Procurement status

Vacuum tanks

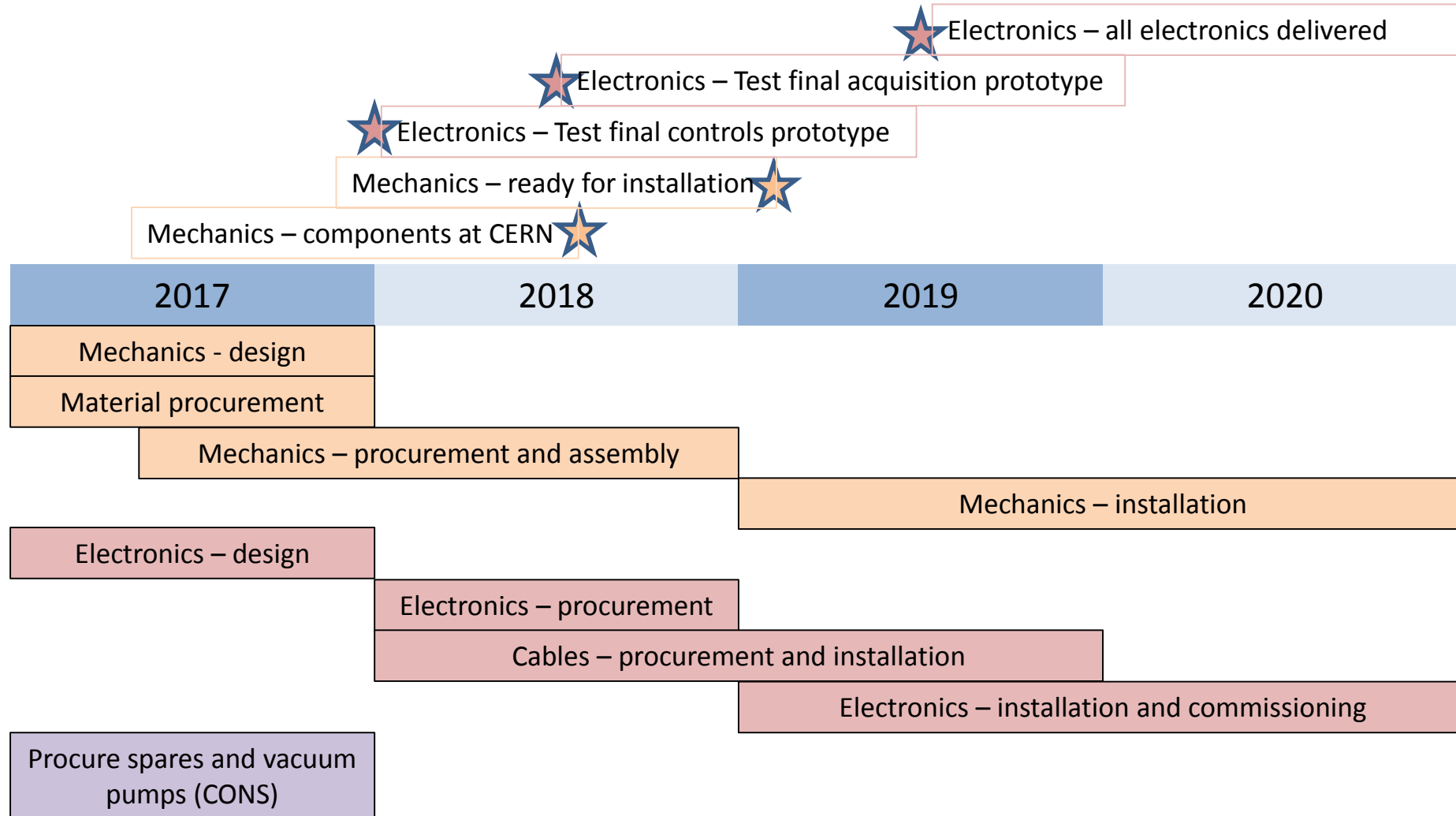
- Market survey completed, 18 companies expressed interest, 9 declined, will now proceed with validation process
- Invitation to tender documents written and under review

Early procurement items (for CONS) identified

- Raw materials already ordered on CONS code

Production Schedule Overview

(Consistent with EVM)





Summary

Project proceeding as scheduled

- Procurement process for mechanics proceeding well
- Testing of prototypes with beam and on the calibration bench producing results consistent with the operational requirements of the LIU machines
 - Exception: Bunch-by-bunch at SPS nominal intensity flat-top with full LHC batch structure

Budget issues resolved

- Budget now fully consistent with the latest detailed cost estimates thanks to additional support from LIU and CONS
 - Details of spending profile for EVM being finalised
- Missing funding for Assembly hall renovation and OASIS systems (requested by OP) – alternative funding under study



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THANK YOU FOR YOUR ATTENTION!



Additional Material

