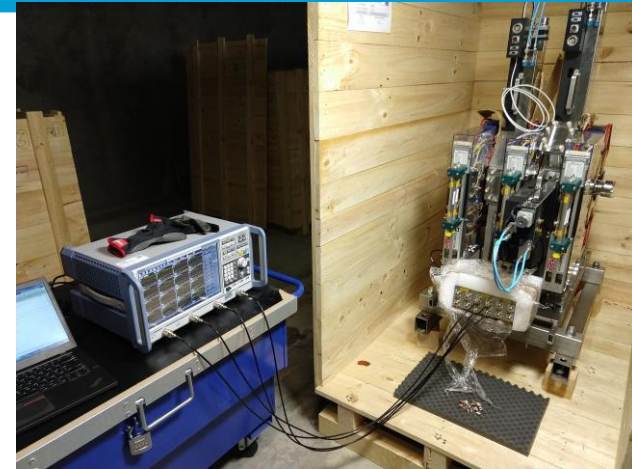
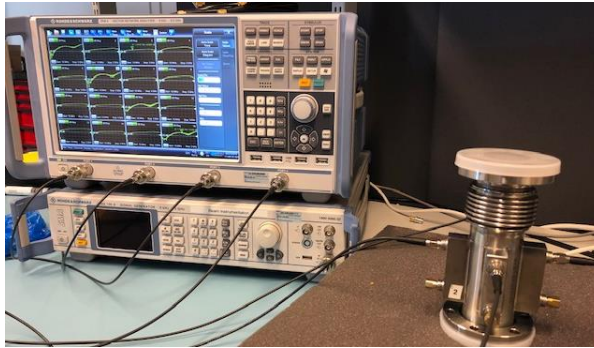
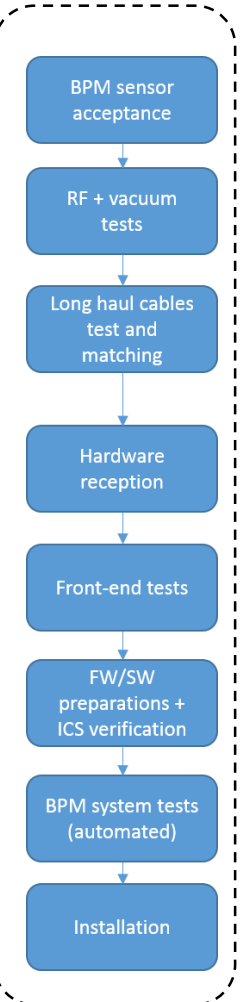
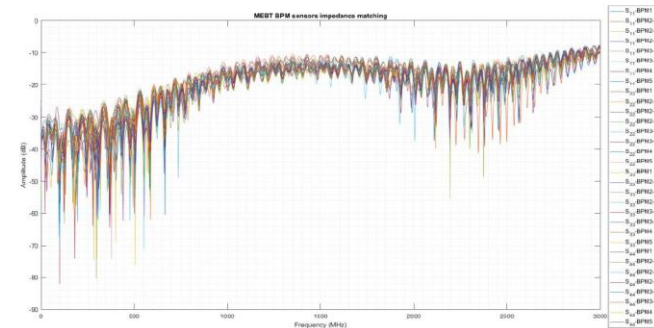


BPM installation workflow / status

Rafael Baron



- 1 damaged BPM during transportation from Bilbao to Lund → Already fixed in a local company and reinstalled in the machine: Already cleaned, RF tested and vacuum checked

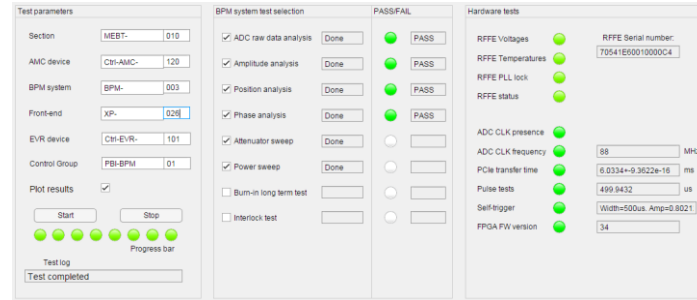
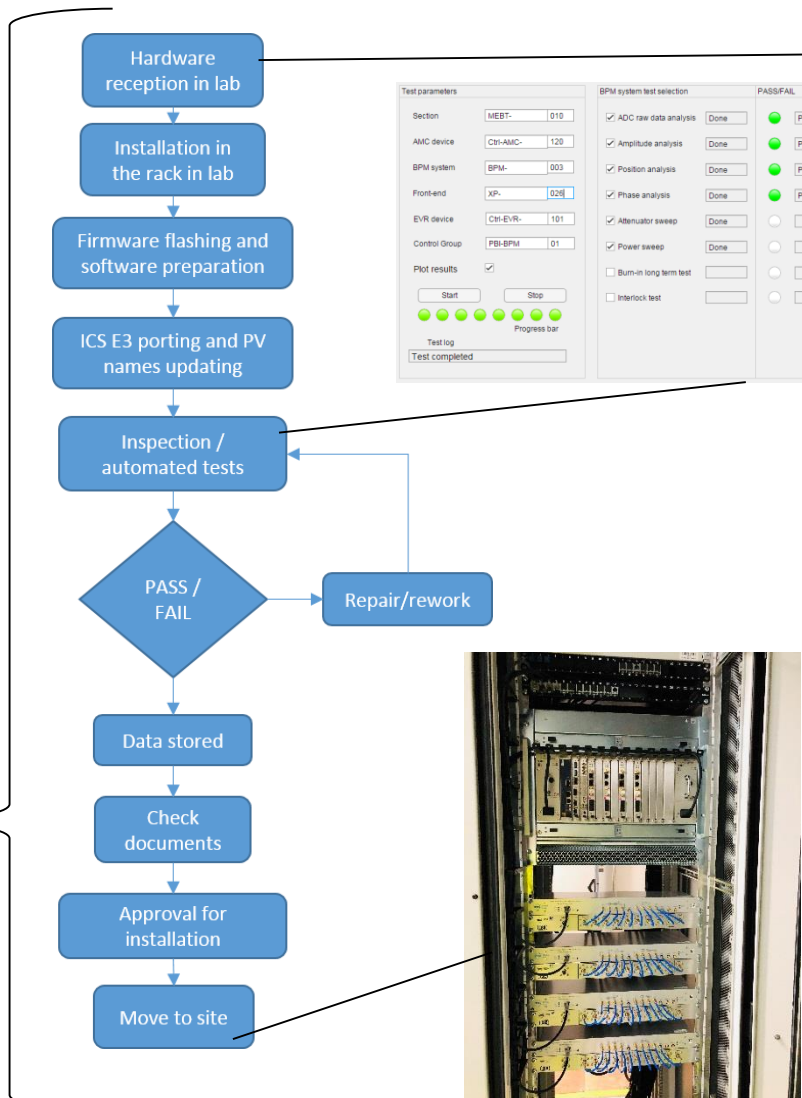
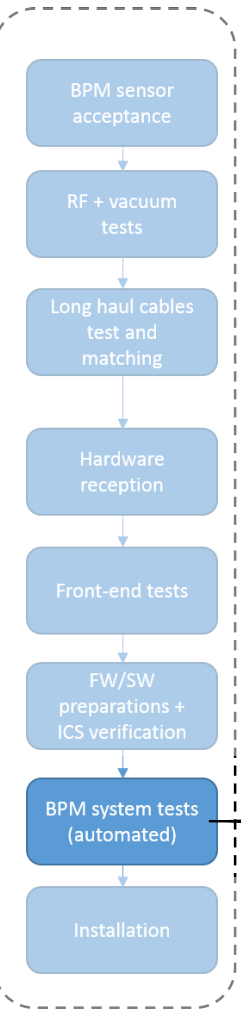


System installed / production tested for:

- All BPM's tested and one was rejected in the workflow
- S-parameters tests: reflection coefficients and crosstalk
- Electrical vs mechanical center misalignment measurements
- Wire tests performed (not full mapping)
- MEBT BPM's tested in Bilbao + on-site

BPM electronics installation workflow

BPM system testing



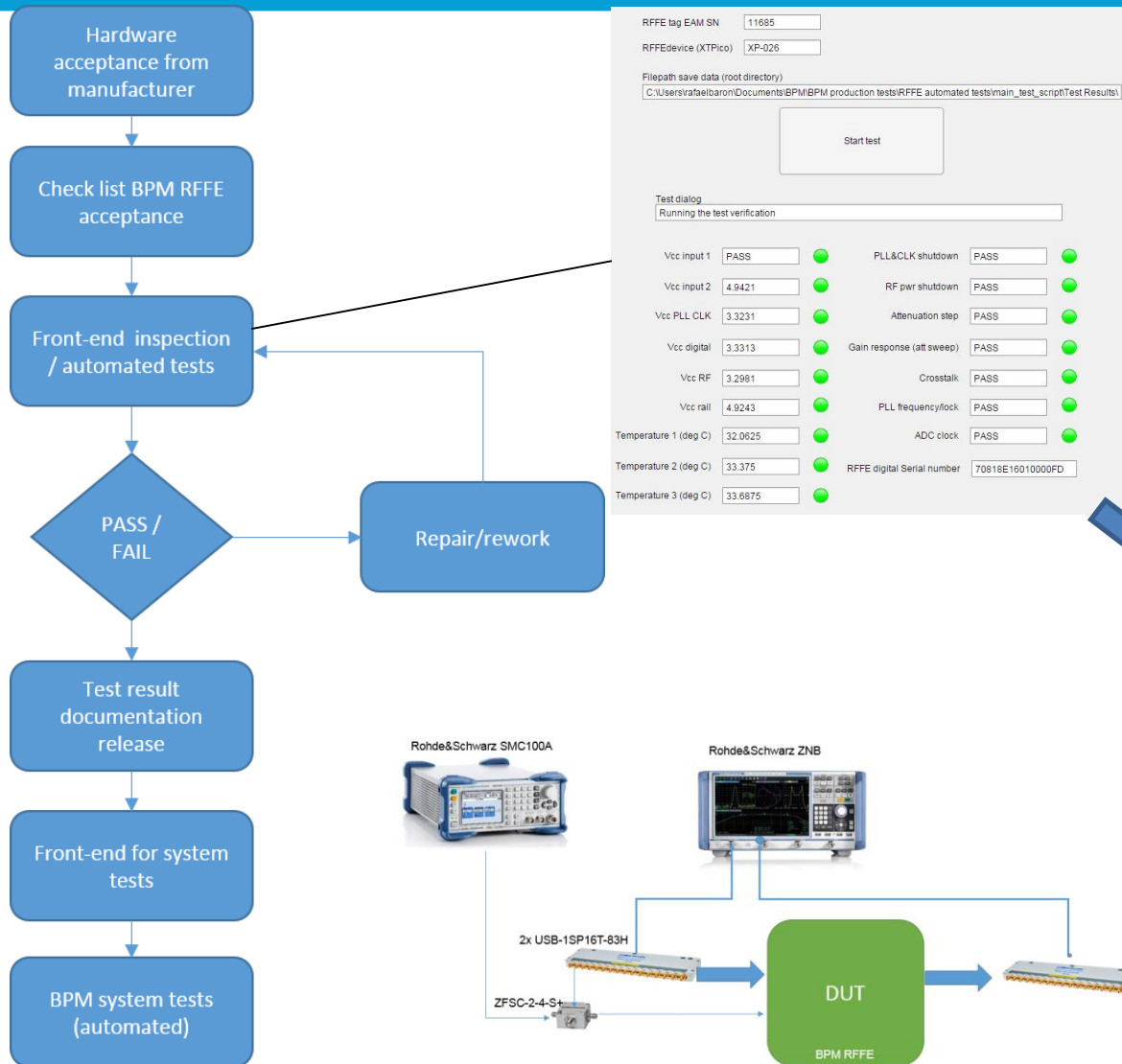
System installed / production tested for:

- BPM sensor tests (S-parameters, center measurements)
- Long haul cables measured and phase matched
- MicroTCA.4 crates tests (voltages, versions, power, etc)
- Voltages, power consumption, etc
- Temperatures
- PLL lock / spectrum
- ADC clock / spectrum
- PCIe transfer time
- Pulsed tests (check EVR and its outputs)
- EVR backplane trigger / Self trigger
- Check firmware version
- SNR, SFDR for given input
- Amplitude (time/frequency domain)
- Phases (time, spectrum and integrated RMS noise)
- Positions (offset, spectrum and integrated RMS noise)
- Attenuators sweep (gain sweep)
- Input power sweep for 3 ms and 5 us pulses



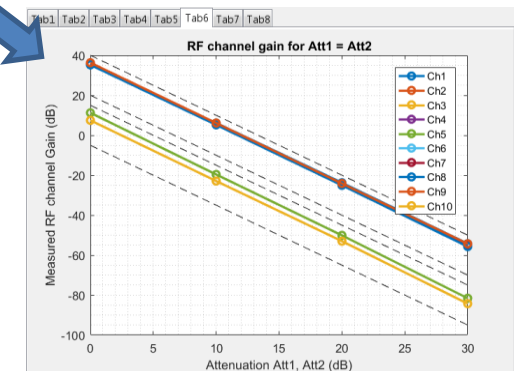
BPM electronics installation workflow

RF Front-end tests



Tested for (given a specific input signal):

- Voltages
- Power consumption
- Temperatures
- Shutdown circuits
- PLL lock / spectrum
- ADC clock / spectrum
- RF crosstalk
- Attenuation step
- Gain sweep
- Serial numbers



MEBT BPM installation status

Component	Status	Responsible	Test	Comments
Beamline sensor	Installed	PBI	Tested	S-parameters Matching performed
Short cables	Installed	PBI	Tested	
Patch panel tunnel	Installed	PBI	Tested	
Cable support	In production	PBI	Not tested	Delay due to ESS workshop closed. We outsourced the production.
Long haul cables	Installed	PBI / INFRA	Tested	Phase matching completed, not connected
Patch panel rack	Installed	PBI	Tested	
Short patch cables	Installed	PBI	Tested	
Front-end	Installed	PBI	Tested	
Front-end -> RTM cables	Installed	PBI	Tested	
RTM	Installed	PBI	Tested	
AMC	Installed	PBI	Tested	
MicroTCA.4 crate	Installed	PBI / ICS	Tested	
FPGA firmware	Installed	PBI	Tested	
IOC / Engineering OPI	Installed	PBI	Tested	
Rack power	Not ready	PBI	?	
Timing system	Installed	ICS	Not tested	
Network	Installed	ICS	Not tested	Additional ethernet ports installed in the rack
Phase reference line	In progress	RF	Not tested	Initial tests in progress at the RF group
Documentation	In progress	PBI		

