

COBALT

Project Update



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General

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- Project planning updated and approved by ASTRON MT
 - Updated planning
 - Integration in Observatory included
 - Project Scientist: Michiel Brentjens
- Network upgrade: separate project
- Commissioning Plan in Draft

- <http://www.lofar.org/wiki/doku.php?id=cobalt:start>



Functional Software

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- Planning / timeline updated
 - Prioritised by Project Scientist
- Correlator
 - Kernels ported to CUDA + functional test per kernel
 - PPF (Filter + FFT) tested against BG/P: 0.1% difference
 - Manual pipeline from station to image
 - Distributed processing on GPU cluster (DAS4)
 - Performance tests of individual kernels indicate 80 stations for Scenario1 hw (CPU limited)
- Beamformer
 - Porting of kernels started
- Fly's eye mode
 - Not started



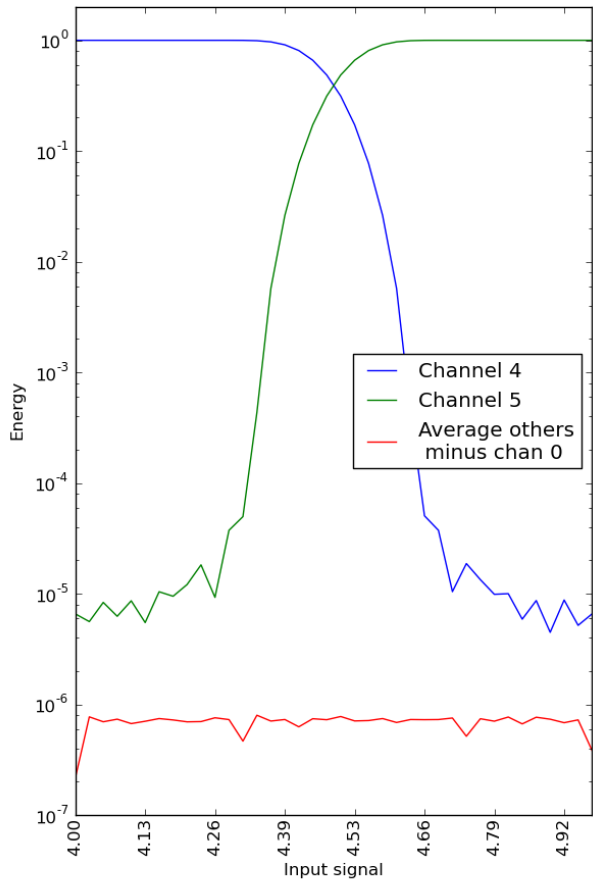
Filter + FFT test

Channel separation

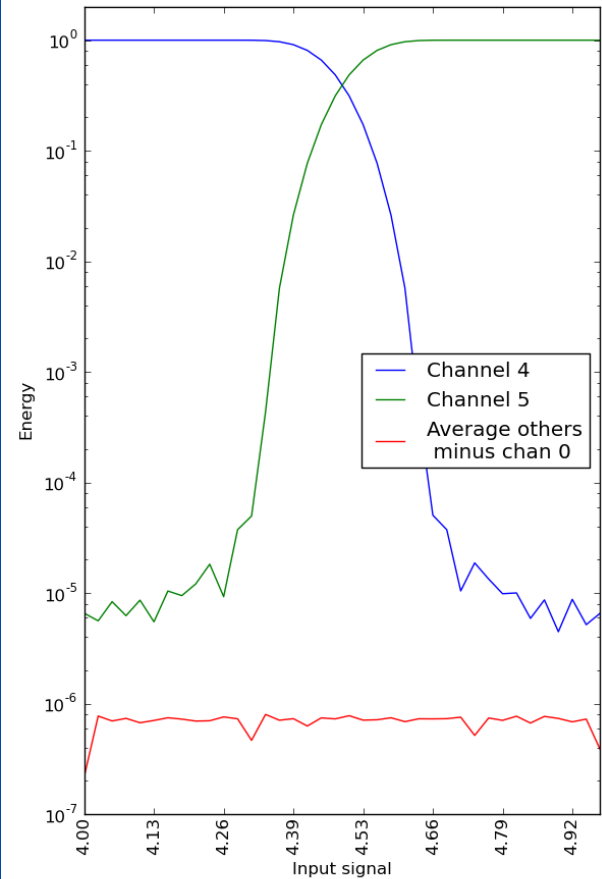
BG/P

COBALT

Energy in channels 4, 5 and the average of the remaining channels for a sinus of stepwise increasing frequency.



Energy in channels 4, 5 and the average of the remaining channels for a sinus of stepwise increasing frequency.





Integration in Observatory

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- Included in Planning
- Started as of May 1st
- Currently preparing integration and testing of COBALT system



Hardware

- Cooling problem solved
- Scenario 1 Hardware ordered yesterday (!)
 - By CIT Groningen
 - 8+1 nodes each having 2 GPUs



LSM 12 June 2013





Network

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- Separate project approved by ASTRON MT
- Hardware is ordered
- Limited reconfiguration: June
- Upgrade planned in September
 - ERIS 2013 and LOFAR Call 1
 - No observing
 - Processing on CEP2 continues



Timeline

Date	Activity	Deliverable
1 January	Start of Project	
Jan / Feb	Preparations	
12 February	Start sw implementation	Draft documents
18 February	Documentation send to CDR panel	Project Plan, Requirements, Top-level Design documents
28 February	System Review	
May -> June	Procurement of Scenario 1 hw	
(end of) June	Scenario 1 hw available First Correlator pipeline	Correlator commissioning plan
July / August	Testing	
~ 1 September	Performance Review	
September	If needed: Scaling up to larger system Network reconfiguration	
October	First Beamforming pipeline	Beamformer commissioning plan
Oct./ Nov.	Full system tests (incl. Observatory)	
End of November	Operational Readiness Review	
31 December	Cobalt replaces BG/P as production system	
Q1 2014	Performance scaling (if needed) Removing old hardware	



Questions?

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