DBBC Production and delivery status

- HAT-Lab is a spin-off company endorsed by INAF, was set in July 2009

- HAT-Lab main task is to produce DBBC back-ends and related equipment in close collaboration with IRA and MPI

- Production activity is shared between Italy (Catania) and Germany (Bonn)

Pre-HAT-Lab system production
(in red EVN stations)

DBBC1   Noto (later updated to DBBC2)

DBBC1   Wettzell1 (later updated to DBBC2)

DBBC1   Wettzell2 (later updated to DBBC2)

DBBC1   Wettzell3 (later updated to DBBC2)

DBBC2   Effelsberg

DBBC2   Yebes

DBBC2   Auscope1 (Hobart12M)

HAT-Lab Batch 1 – production and delivery 2009-10

DBBC2   **Onsala1**

DBBC2   **SRT**

DBBC2   Pico Veleta

DBBC2   APEX

DBBC2   Wark12M

DBBC2   Auscope2 (Kath12M)

DBBC2   Auscope3 (Yarr12M)

HAT-Lab Batch 2 – production and delivery 2010-11

DBBC2   Torun

DBBC2   Irbene

DBBC2   Hartebeesthoek1

DBBC2   Hartebeesthoek2

DBBC2   Auscope4 (Ceduna)

HAT-Lab Batch 3 – production and delivery 2011-12

DBBC2   Medicina

DBBC2   Metsahovi

DBBC2   Auscope5 (Hobart26)

DBBC2   Seshan65

HAT-Lab Batch 4 – production and delivery 2012-13

DBBC2   Seshan65

DBBC2 Warkworth 2 (New Zealand)

DBBC2 AVN (Hb,Ghana)

HAT-Lab Batch 5 – production and delivery 2013-14

DBBC2   Ny Alesund

DBBC2   Onsala2

DBBC2   Yebes2

DBBC2   Yebes3

DBBC2   Jodrell Bank

Station	DBBC	Comment
Noto	Available (upgrade to DBBC2010 under way)	FILA10G available
Effelsberg	Available	FILA10G available + spare
Onsala	Available, second ordered	FILA10G available
Yebes	Available, second and third ordered	FILA10G available
Wettzell	Available 3 (usable as DBBC2010)	
Torun	Available	
Metsähovi	Available	FILA10G available
Hartebeesthoek	Available 2	FILA10G available 2
Medicina	Available	FILA10G ordered
Westerbork	Asked quotation	
Jodrell Bank	Ordered	
Cambridge	-	
Svetloe	-	Own semi-digital system
Zelenchukskaya	-	Own semi-digital system
Badary	-	Own semi-digital system
Urumqi	-	
Shanghai	Available	FILA10G available
Arecibo	-	RDBE
Robledo	-	
Sardinia	Available	FILA10G available
Simeiz	Asked quotation	
Venspils	Available	
Evpatoria	Orderd, when ready cancelled	

New Firmware/New Functionality (1/3)

DDC_v105

- 'led=brd#' reports the Core2# leds status at 1pps transit
  useful for remote check when leds are not visible

- 'fila10g=..' direct commands through the serial connection
  no need to use a separate control program

- 'dbbcifx=......,update_time' in seconds, 1-3600
  slower agc update time, default was 1, Uwe's request

- 'calibration=brd#|all'
  added individual Core2 calibration, useful for Core2 on the same IF (Mh, Nt)

DDC_v105E

- same as v105, additionally

- 32 MHz new band (shape as today 16 MHz)

- 16 MHz improved shape (as today 8 MHz)

- 'vsi_clk=32|64' selection of output VSI clock frequency

DDC v105F

- same as v105E, additionally input bandwidth 1024 MHz

New Firmware/New Functionality (2/3)

PFB v15

- 'led=brd#' reports the Core2# leds status at 1pps transit
  - useful for remote check when leds are not visible

- 'fila10g=..' direct commands through the serial connection
  - no need to use a separate control program

- 'dbbcifx=......,update_time' in seconds, 1-3600
  - slower agc update time, default was 1

- 'calibration=brd#|all'
  - added individual Core2 calibration, useful for Core2 on the same IF (Mh, Nt)

PFB v15F

- same as v15, additionally

- Input bandwidth is 1024 MHz, output bandwidth is 64 MHz, vsi output clock 128MHz

New Firmware/New Functionality (3/3)

FILA10G v3

- format mode: MK5B, VDIF, RAW

- extended MK5B frame register (16-bit) for 4Gbps

- used for e-vlbi 4Gbps test

FILA10G v3.1

- corner turned data streams

- VDIF multi-thread with independent destination IP address

- decimation and bitmask for reduced amount of recorded data

- multi-mode VSI output selection (input copy, 10G rx raw format, 10G rx VSI-H format)

- support 2 or 4 VSI-H input ports for 8 Gbps as 4 x 2 Gbps or 2 x 4 Gbps (PFB v15F)