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Current status of the development and performance of OCTAVE-DAS and Correlator System

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Content :

The new VLBI observing system (OCTAVE-DAS) have been developed based on the VSI-H and VDIF specifications at NAOJ (National Astronomical Observatory of Japan). It consists of 1) a high speed 1-20 Gbps 3-10 bit RF direct ADC (OCTAD) enable us to acquire not only wide intermediate frequency but also radio frequency up to 50 GHz and have DBBC functions for VGOS (VLBI Global Observing System), 2) a converter (OCTAVIA and OCTAVIA2) between one 10 GigE port and four 2 Gbps input and output ports conformable to VSI-H, and 3) new recorders (OCTADISK, OCTADISK2 and VSREC) have functions of both recording and playing at a maximum rate of 32 Gbps and 4) Gbit realtime correlator (OCTACOR) and software correlator system (OCTACOR2) using GICO3 was developed by NICT. We have been upgrading the software correlator using GPGPU technology. These OCTAVE-DAS are connected via >10 GigE network with VDIF and VSI specifications. These components have been used for VERA, JVN (Japanese VLBI network) and Daejeon Correlator. We will report on a installation plan and a 4-year progress since the 7th IVS general meeting and results of test and scientific broad-band(>8 Gbps) VLBI observations using the OCTAVE-DAS.

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