

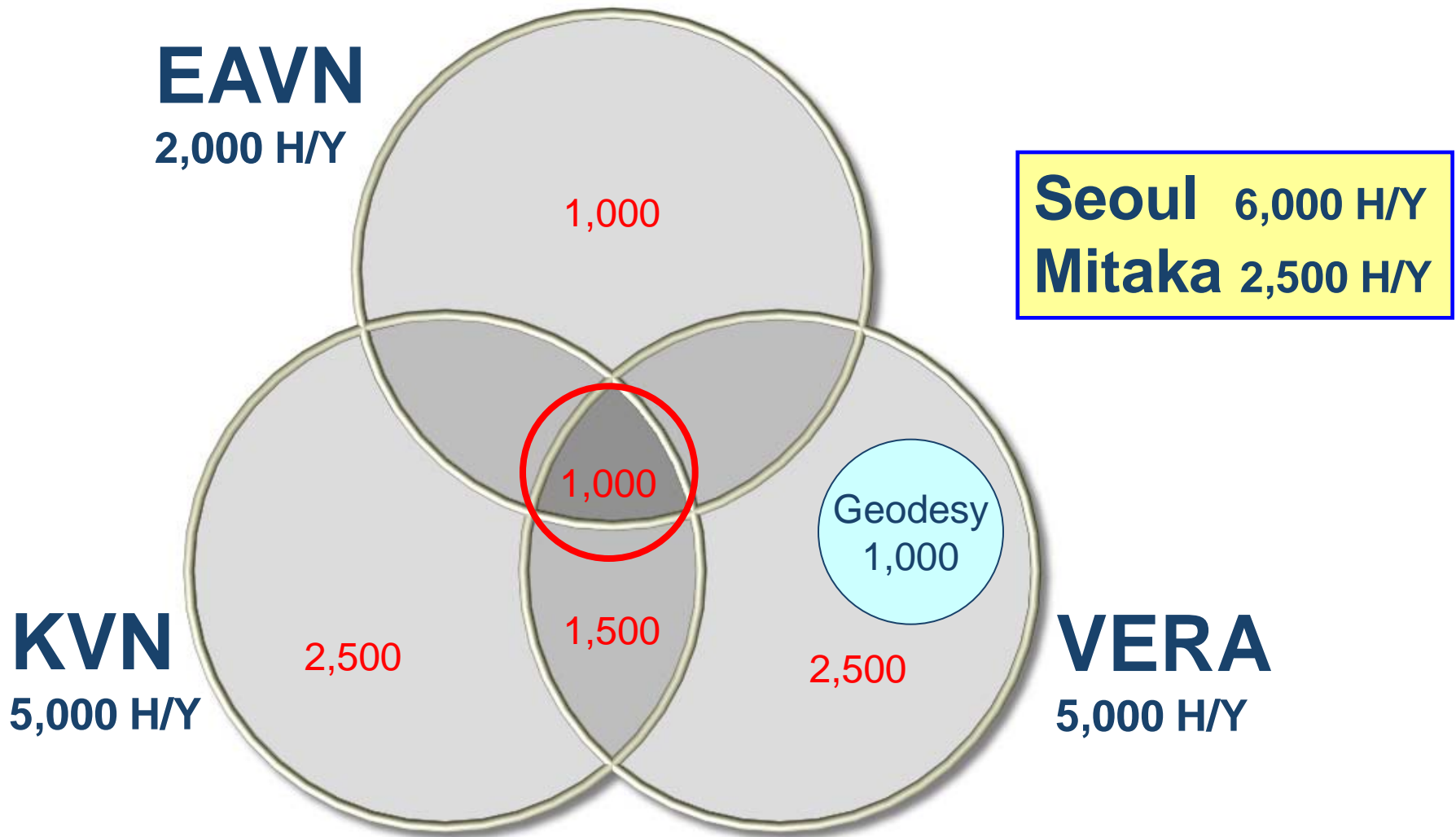
East Asian VLBI Network

H.Kobayashi (NAOJ)
VERA Users Meeting
September, 29, 2011

East Asian VLBI Network array



Assumption of Observation Time

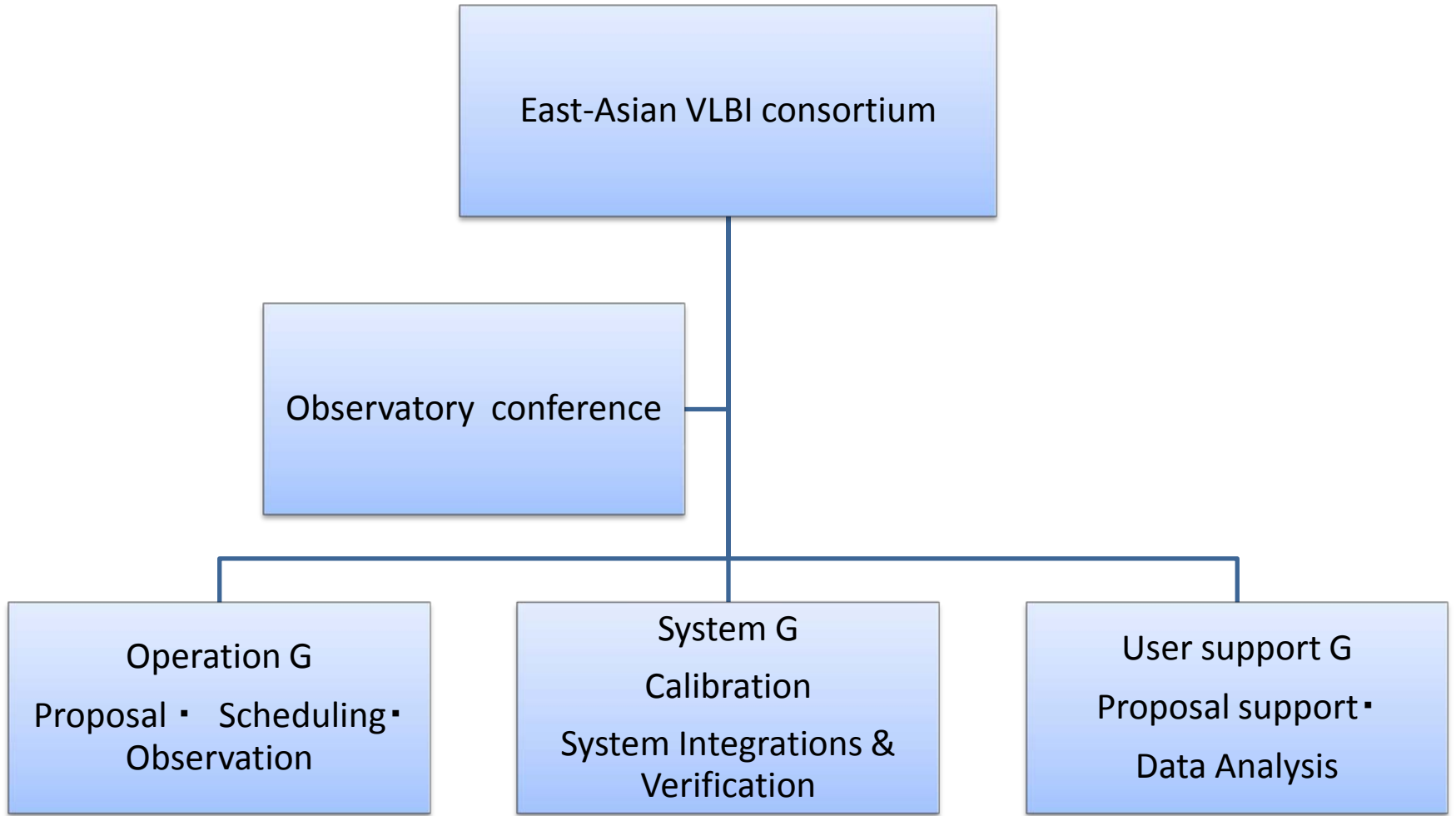


East Asia VLBI consortium
(under East Asia Core
Observatory Association)
2004~

Japanese VLBI network
Including VERA
(NAOJ)

Korean VLBI network
(KASI)

Chinese VLBI
Network
(SHAO?)



East-Asian VLBI consortium

Observatory conference

Operation G

Proposal ▪ Scheduling ▪
Observation

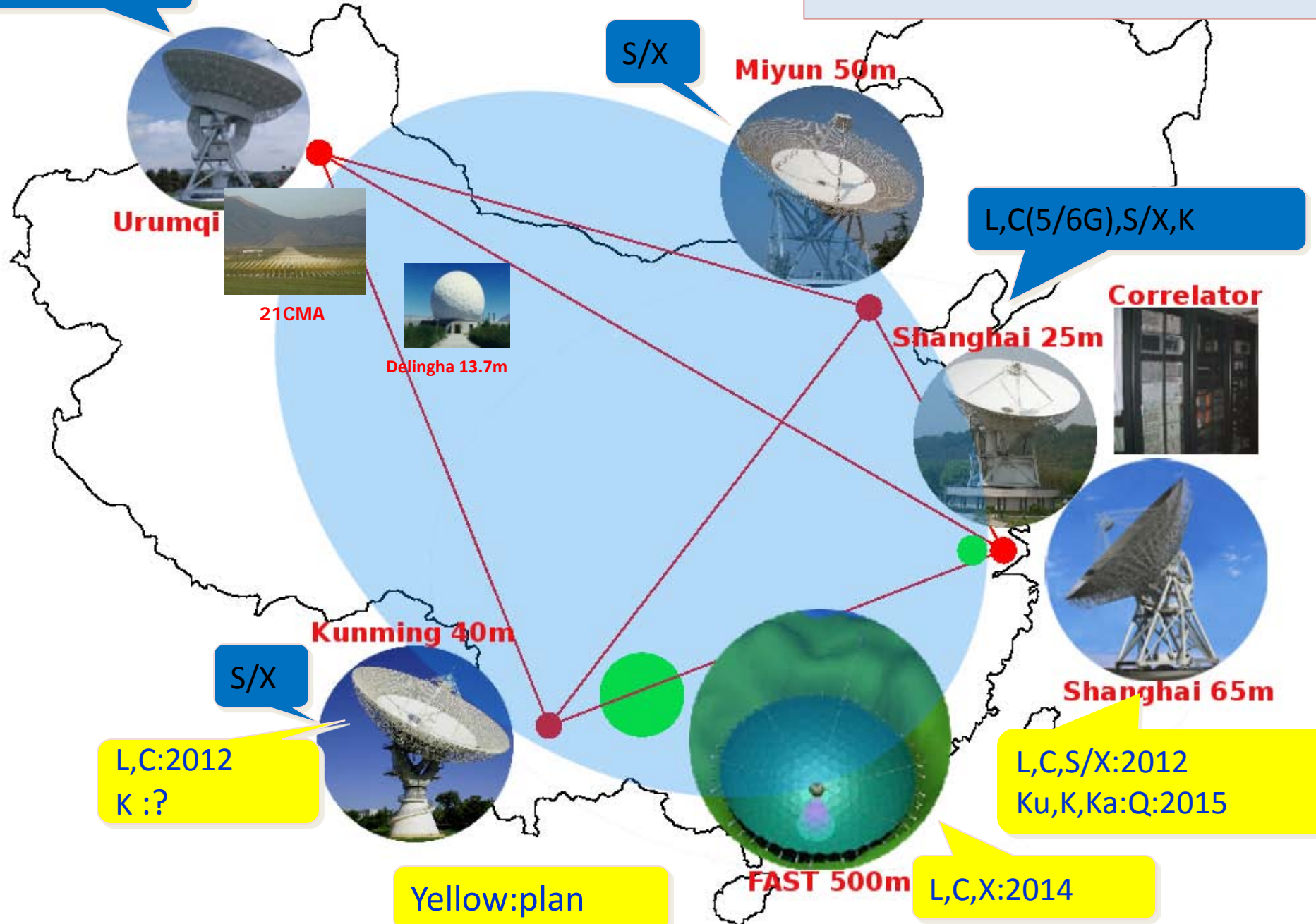
System G

Calibration
System Integrations &
Verification

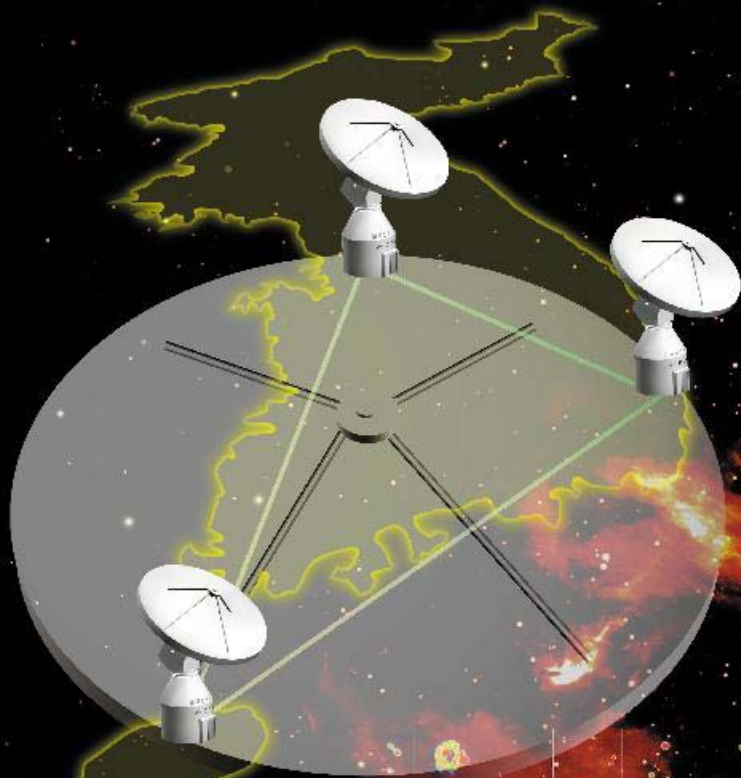
User support G

Proposal support ▪
Data Analysis

VLBI in China



KVN 한국우주전파관측망 Korean VLBI Network



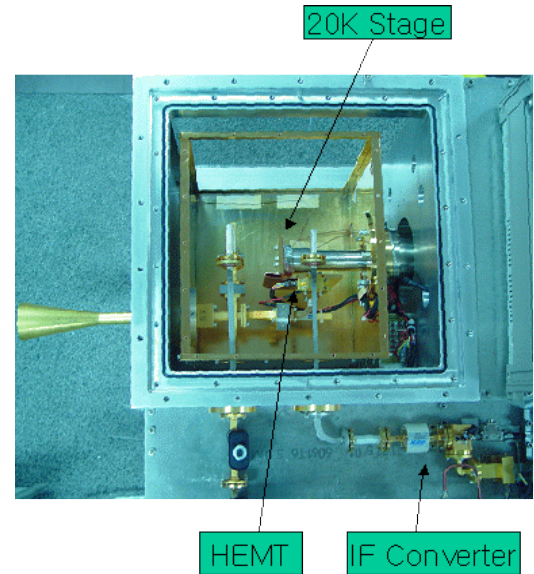
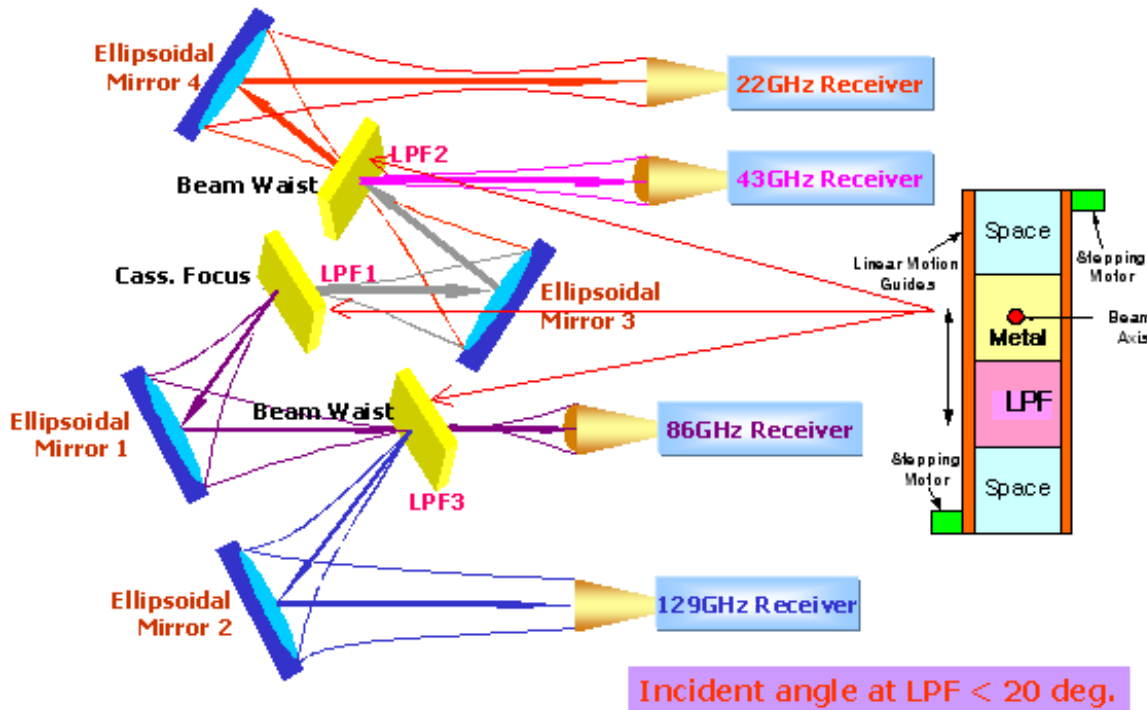
한국천문연구원
내셔널파인분해 KVN사업부



Constructions of three stations were completed on Dec. 2008 !

Simultaneous Multi-Frequency Obs. -
Phase Compensation, mm-VLBI

Receiver



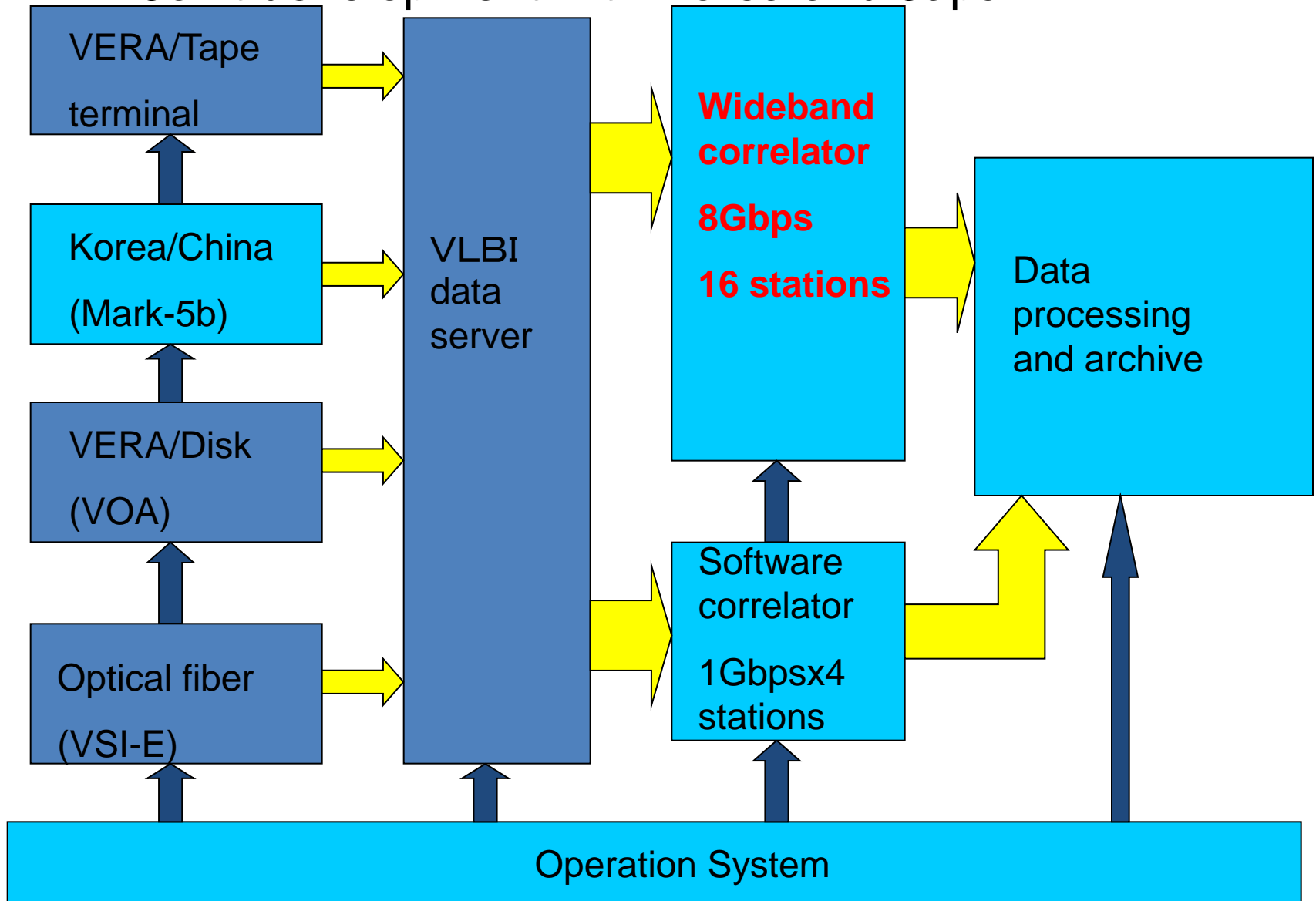
Prototype 43 GHz Receiver

Freq. Band	S Band	X Band	K Band	Q Band
Freq. Range	2.2 ~ 2.8 GHz	8 ~ 9 GHz	21.5 ~ 23.5 GHz	42 ~ 44 GHz
Rx Noise	< 25 K	< 25 K	< 30 K	< 50 K
1 st IF / BW	2.5G/600MHz	8.5G/1GHz	8.5G/2GHz	8.5G/2GHz
IF Power	-20 dBm	-20 dBm	-20 dBm	-20 dBm
Polarization	LCP/RCP	LCP/RCP	LCP/RCP	LCP/RCP

* 86, 129 GHz Receivers was installed at Yonsei station.

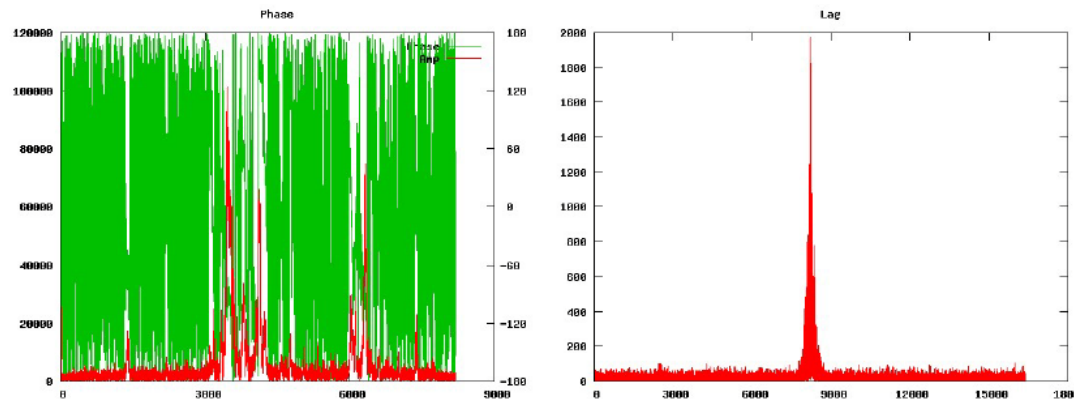
New Correlator at Seoul

-Joint development with Korea and Japan -



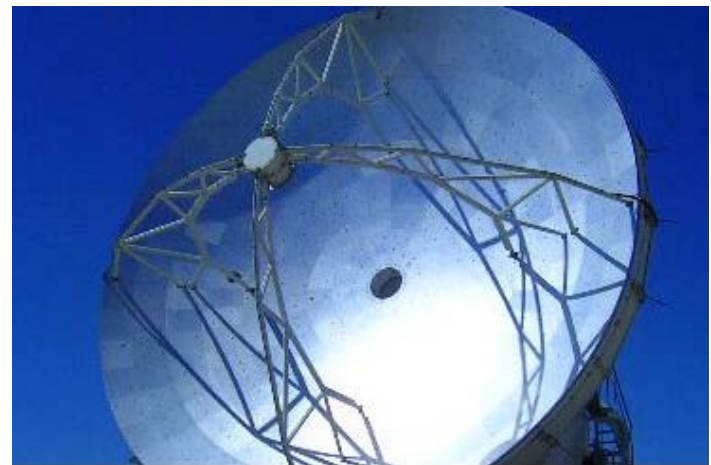
Fringe from Seoul Correlator

Cross-Correlation Example



Taiwan

- Project of Submillimeter VLBI
 - ALMA prototype antenna (12m, $\sim 30\mu\text{rms}$) will be moved to **Greenland**.
 - 230/350 GHz VLBI
 - ALMA, SMA, LMT, CARMA.....



EAVN observations

- KVN/VERA : Some scientific verification observations are on going.
 - 22GHz/43GHz mapping
 - Geodesy
 - 43GHz SgrA* etc.
- CVN(Shanghai)/JVN
 - Methanol(C band) observations
 - X band mapping test

VERA+KVN Science WG

- Astrometry
- Evolved star
- Star formation
- AGN
- Sgr A*

Schedule

- 2011
 - Start of science observations with Japan (VERA,JVN) /Korea (KVN), and Japan(JVN)/China(CVN).
 - VERA+KVN Science Case-study
 - CVN+JVN Science Case-study
- 2012
 - Start of science observations with Japan, Korea and China -> Possible ?