



SAR/BDS Service Status

China Transport Telecommunications & Information Center

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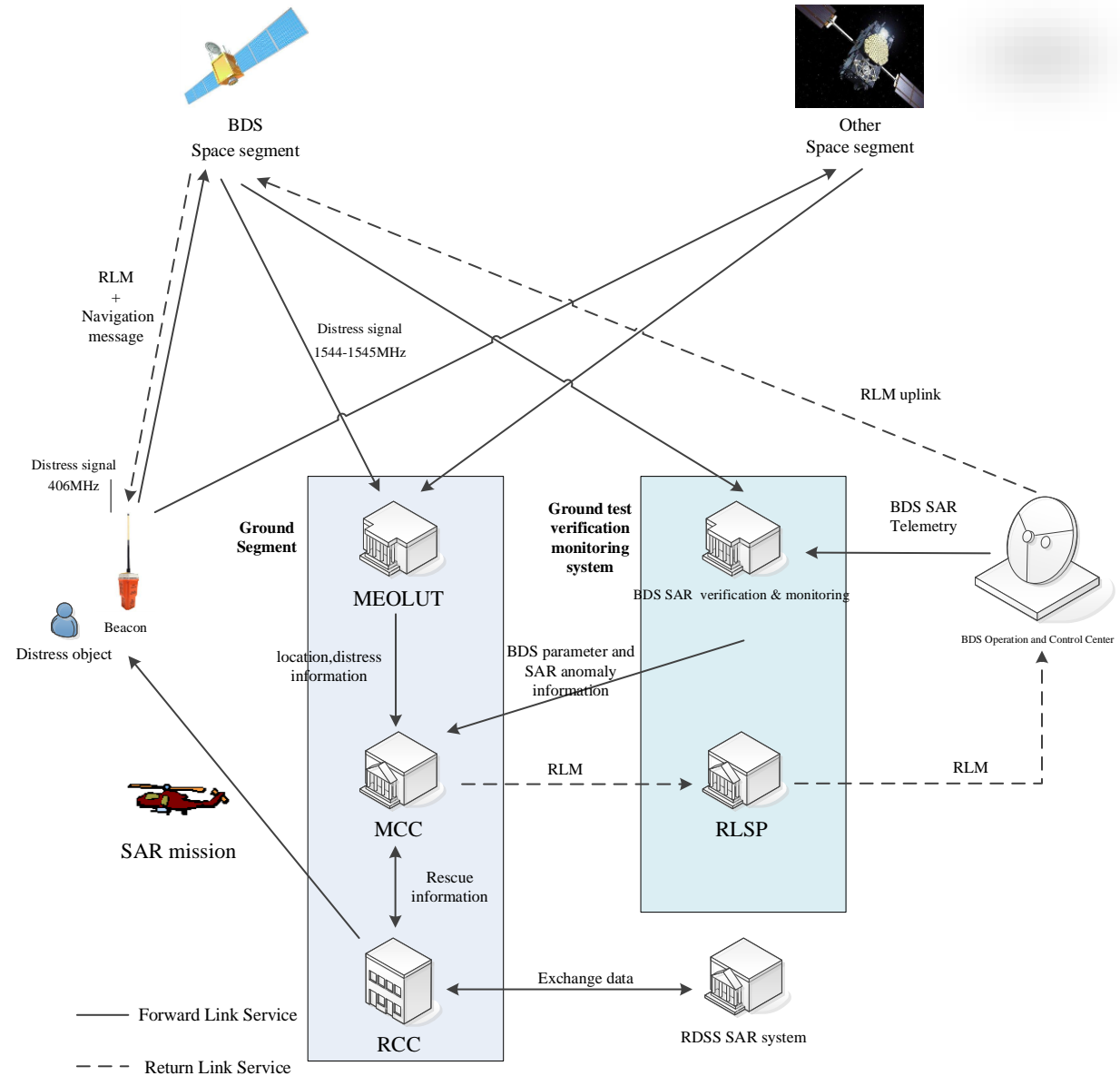
ICG13, Xi'an, Nov 2018

- SAR/BDS system Introduction
- SAR/BDS Forward Link Service Overview
- SAR/BDS Return Link Service Overview
- IOT for BD-3-M13, BD-3-M14
- International cooperation
- Road Map



SAR/BDS Introduction

System Scheme



SAR/BDS Service Space Segment Deployment

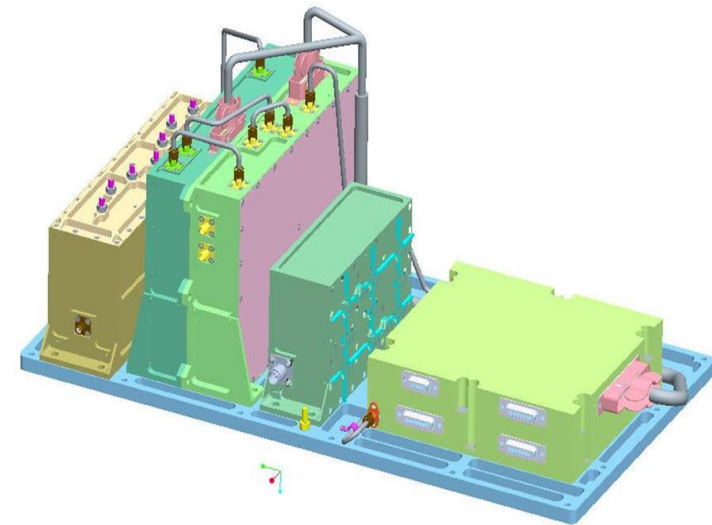
- 24 MEO in total
- 6 MEOSAR in 3 planes
- 55° inclination
- 775 minutes period
- More details in JC-32-Inf-54.pdf
DEVELOPMENT PLAN FOR SAR/BDS



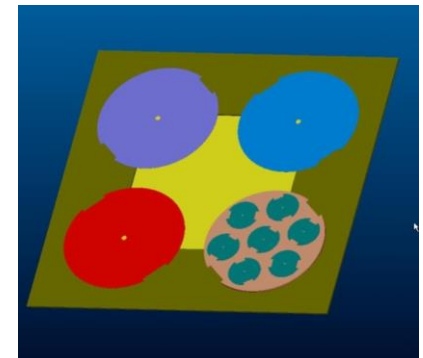
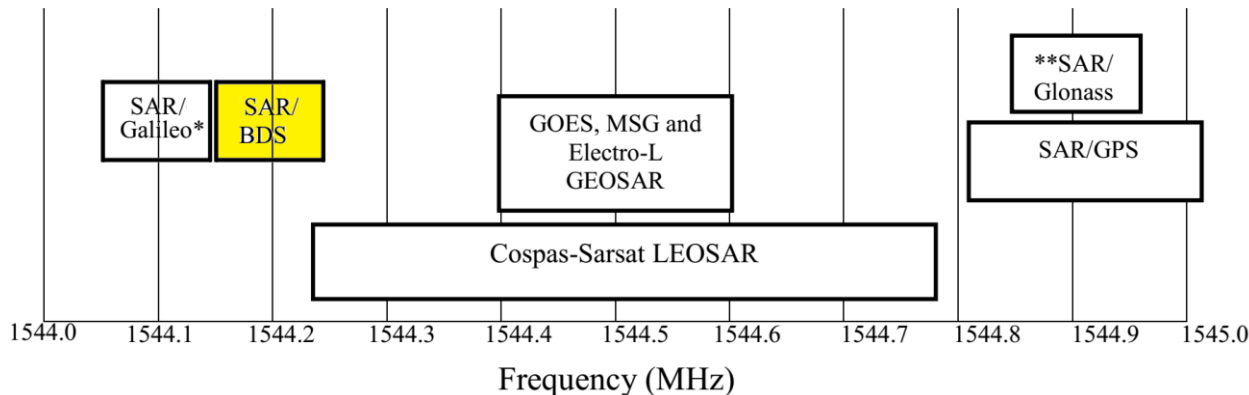
Satellite	Plane and slot	Launch Date
BD-3-M13, BD-3-M14 (632, 633)	B1, B3	2018/09/19
BD-3-M21, BD-3-M22	A6, A8	TBD
BD-3-M23, BD-3-M24	C3, C5	TBD

Space Infrastructure: SAR Repeater on board BDS satellite

- RX: 406.05MHz , RHCP
- TX: 1544.21MHz, RHCP, 48 dBm EIRP
- Operating modes:
 - Narrow Band (50kHz) / Wide Band (90kHz)
 - Default Mode : ALC / 90kHz
- Designed under C/S standard T.016
- More detail JC-32-Inf-55.pdf

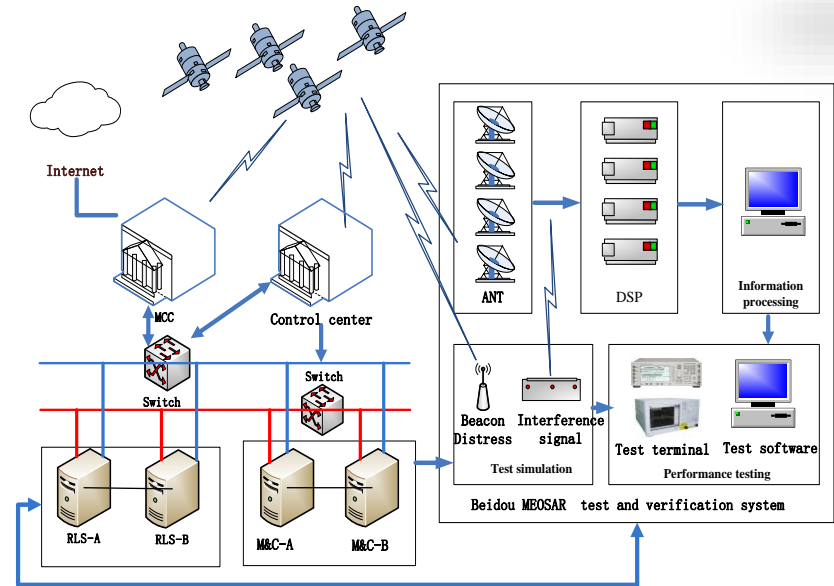


CHARACTERISTICS OF THE SAR/BDS PAYLOADS



Ground Infrastructure: MEOLUT

- NEW Beijing MEOLUT: 6 pairs of 2.4m dish antennas
- SAR/BDS, SAR/GPS, SAR/GALILEO and SAR/GLONASS supported
- Deployment by the end of 2019
- Qualification in 2020
- Designed under C/S standard T.020

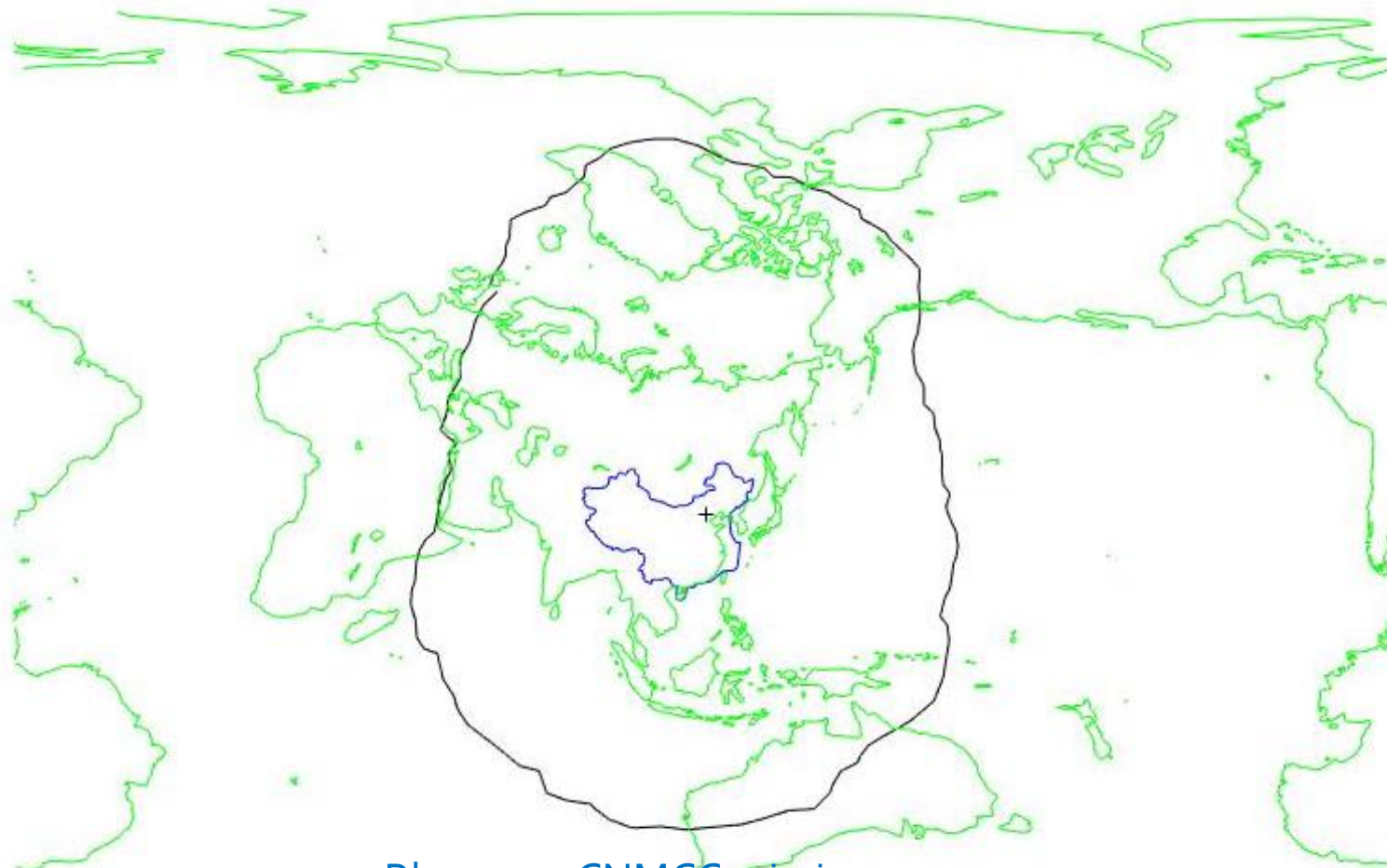


Prototype of Beijing MEOLUT



CNMCC

Beijing MEOLUT received distress signal coverage:



Blue area: CNMCC mission area
Plus TWMCC and HKMCC to cover entire country

RLM and SGB

- Return Link Message
 - **Type 1 Acknowledgement:** system feedback, alert has been detected and located
 - **Type 2 Acknowledgement:** RCC feedback, more specific information can be given
 - Frequency TBD
- BDS Second Generation Beacon
 - Developing
 - C/S standard T.018
 - Ready for BDS/RLS, Galileo/RLS

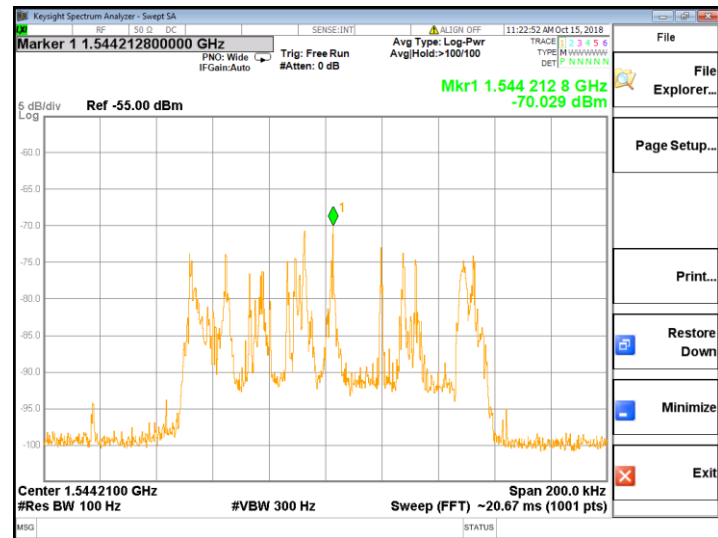
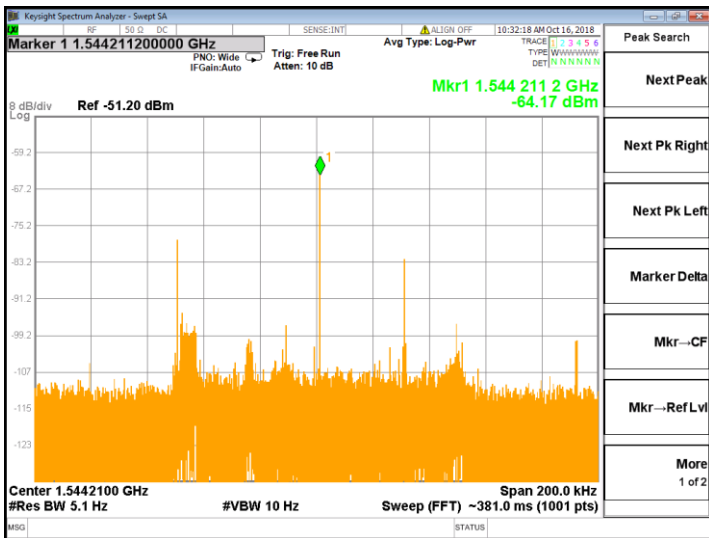


- IOT was started from September 2018. Now is in progressing.
- C/S standard T.017



Test	
1	SARR Gain
2	Translation Frequency
3	SARR G/T
4	Axial ratio (optional)
5	Amplitude Transfer Function in ALC mode
6	Frequency Response
7	Linearity/Third Order Intermodulation
8	SARR EIRP
9	Forward Group Delay variation in frequency
10	Spurious Output Level
11	Beacon Signal Processing

IOT for MEO-13 MEO-14

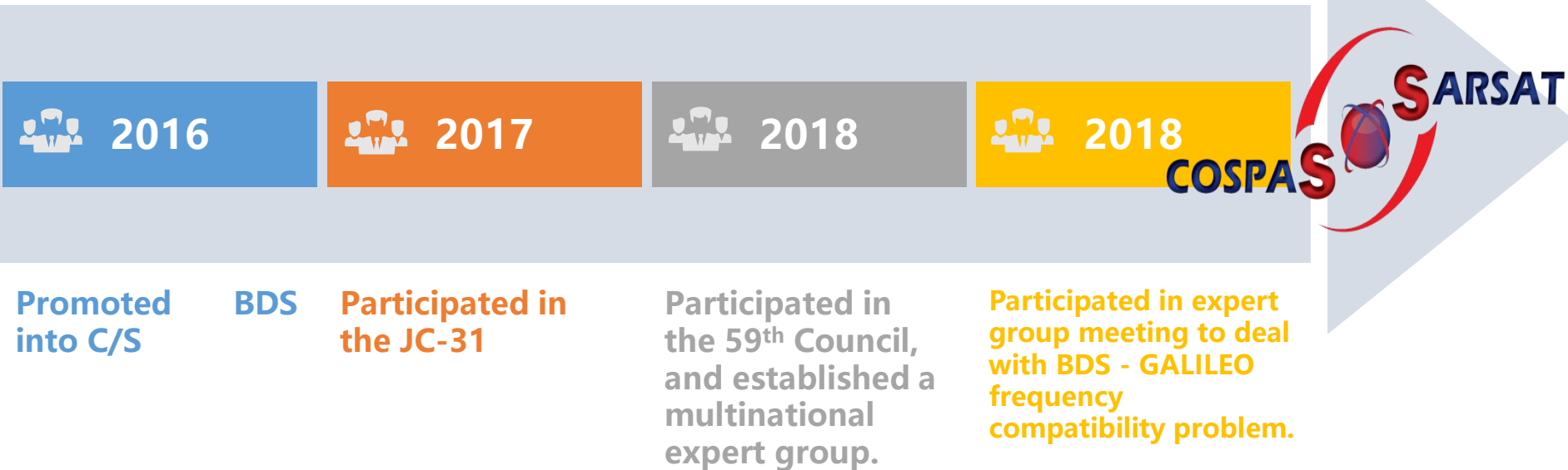


通道号	检测信标计数	FOA	TOA	BCH1纠正码	BCH2纠正码	BCH3纠正码	BCH4纠正码
1	294	9832.5498 Hz	31441.5 us	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0



Improve the capability of the International SAR service

- SAR/BDS has been written into *COSPAS-SARSAT 406 MHz MEOSAR IMPLEMENTATION PLAN(C/S R.012)*.
- 2018 October, C/S JC-32 ,Submit *DEVELOPMENT PLAN FOR SAR/BDS (JC-32-Inf-54)* and *CHARACTERISTICS OF THE SAR/BDS PAYLOADS (JC-32-Inf-55)*.



2018:

- Finish IOT
- Construct MEOLUT
- Demonstrate Return Link Service

2019:

- Finish SAR/BDS MEOLUT to meet C/S FOC standard
- Increase performances and coverage with additional MEOSAR

2020: SAR/BDS FULL OPERATIONAL CAPABILITY MILESTONE

- Fully deploy BDS MEO constellation with SARR
- Release BDS second generation beacons
- Enhance Interoperability with other RLS providers



Create a Community of Shared Future for Mankind.

Thanks!