



Role of IN-SPACE: Global Standards in Satellite Communications

14th December 2022

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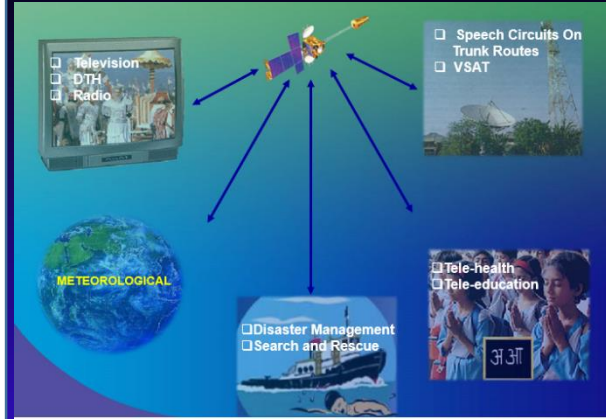
Mandate

As per Mandate in the Gazette Notification, IN-SPACe, as a single window nodal agency, with its own cadre will **promote, permit and oversee** the:

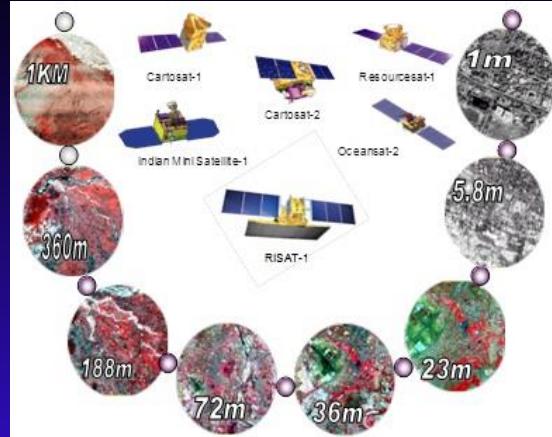
- i. **Space activities** including building of Launch Vehicles & satellites and providing **space-based services** as per the definition of space activities legislation.
- vii. **Usage of spacecraft data and rolling out of space-based services** and all the associated infrastructure for the same.
- ix. IN-SPACe shall **work out a suitable mechanism for promotion and hand holding, sharing of technology and expertise to encourage participation of NGPEs in space activities.**

Space Sector

Upstream



Communication & Navigation

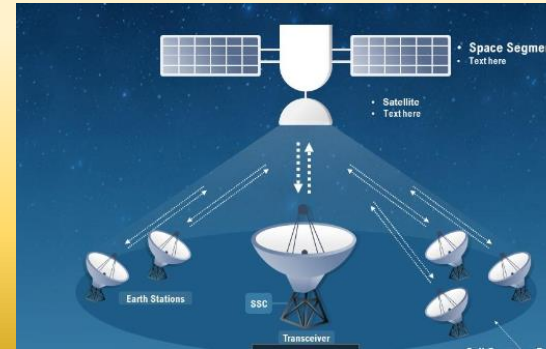


Earth Observation

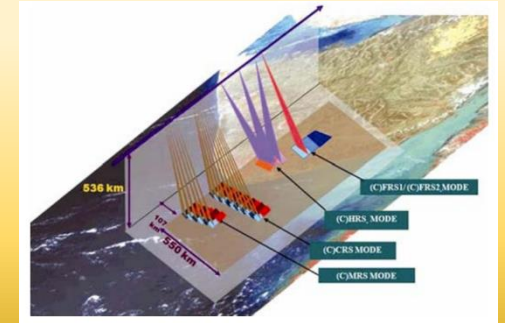


Space Transportation

Downstream



Ground Network



Applications : Space Service & Products

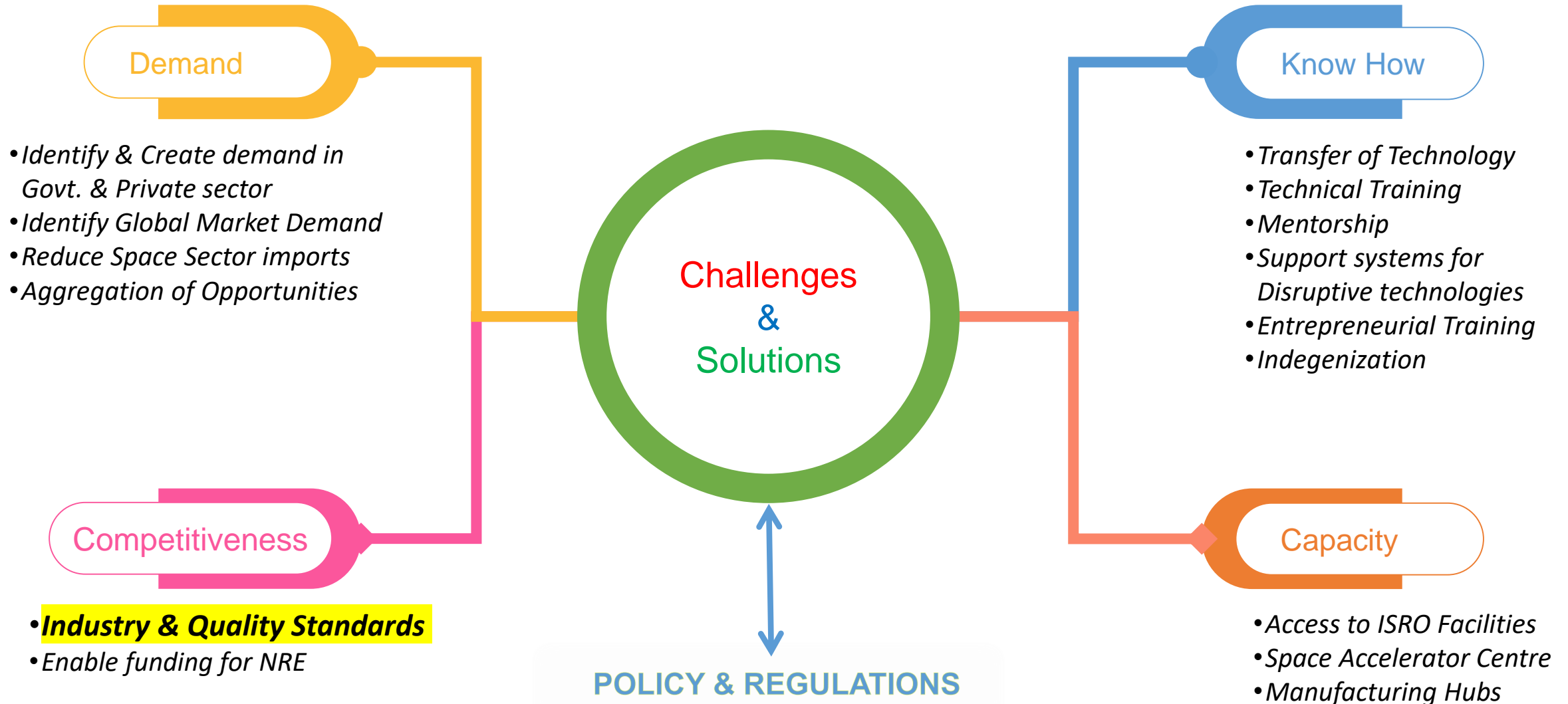


Space Science



Defense

Others





The need for Standardization



- Ensures same quality product every time
- Interoperability
- Interchangeability
- Global Acceptance
- Cost reduction
- Ease in verification and validation

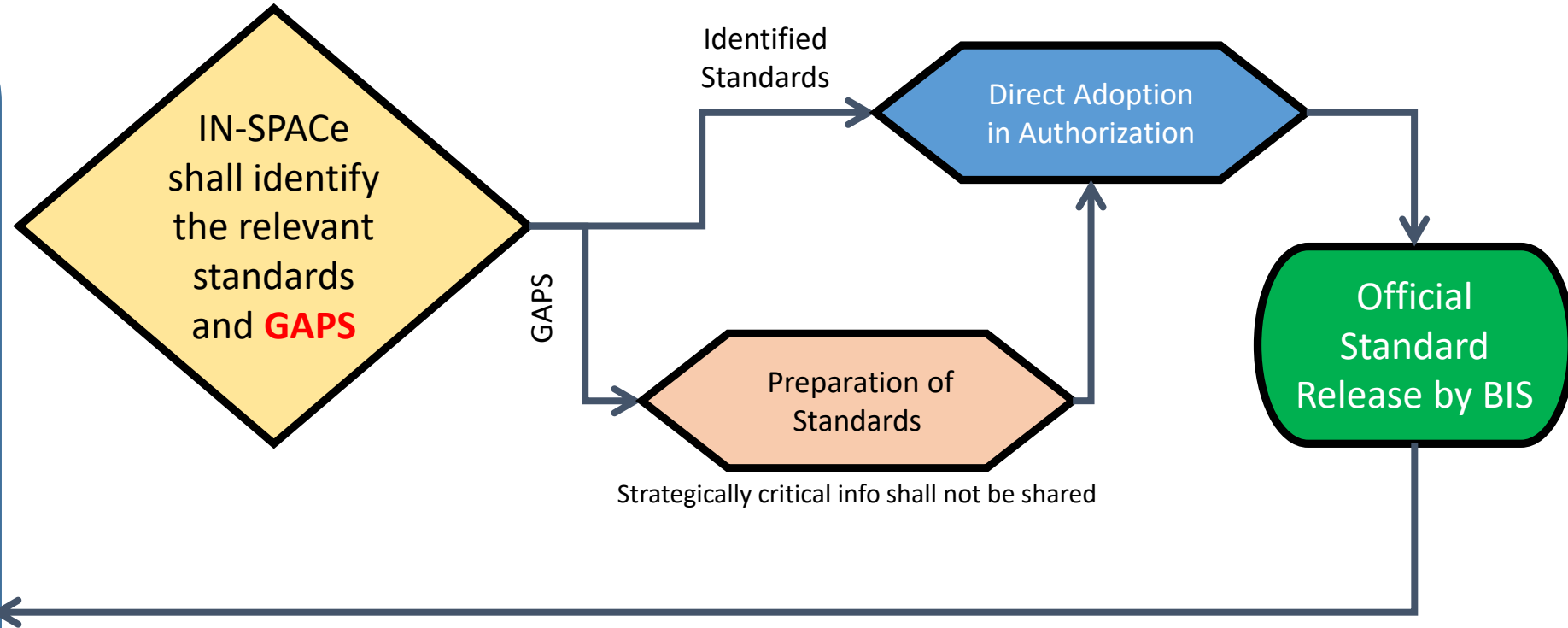
- The Space related R&D activities worldwide is being predominantly being carried out by the space agencies under respective state department viz., NASA, ESA, JAXA, ISRO/DOS etc.
- In order to encourage active participation of private entities in space sector, the space agencies have realised that there is a significant need to standardize the best practices being followed by respective space agency for the industry.
- **Consultative Committee for Space Data Systems**
- The Globally accepted space industry standards are:
 - I. European corporation for Space Standardization (ECSS)
 - II. Military Standard (MIL)
 - III. NASA Technical Standards System (NTSS)
 - IV. International Organisation for Standardisation (ISO)
- The heritage and experience garnered by ISRO are culminated in the form of Lessons Learnt Documents. Currently ISRO-HQ has 26 standards released for internal ISRO use.

Mechanism

IN-SPACe is pursuing an action plan towards formulation/adoption of standards for the space industry in India and thereby make them globally competitive.

Compilation of following standards:

- ISO / TC 20 / SC 14 “Space Systems & Operations” (186)
- ISO / TC 211 “Geographic information/Geomatics” (90)
- BIS / LITD 22 “Geospatial Information Sectional Committee”(12)
- BIS / TED 14 “Air and Space Vehicles” (157)
- ISO/TC20/SC13 Space data and information transfer systems



IN-SPACe is being nominated as member for committee

thanks

- All 445 standards will be analyzed for applicability in Indian Space Industry within a period of 12 months
- Nomination for membership in BIS committees have been proposed
- Discussion regarding adoption of all relevant/applicable ISO standards within BIS framework will be initiated in a span of 12 months
- Periodic interaction with Industry experts shall be carried out for identifying the GAPS in the space industry standards
- A framework for joint preparation and release of Space industry Standards by IN-SPACE and ISRO shall be finalized

THANK YOU

STANDARDISATION ORGANISATIONS



Sl. No.	Committee	Name	Department	Contact Person	Email id	Headquarter
1.	ISO / TC 20 / SC 14	Space Systems & Operations	Aircraft & Space Vehicle	Nick Tongson	nickt@aiaa.org	Washington DC
2.	ISO / TC 211	Geographic information / Geomatics	--	Mats Ahlin	mats.ahlin@sis.se	Sweden
3.	BIS / LITD 22	Geospatial Information Sectional Committee	Electronics and Information Technology Department	Ashish Tiwari	litd@bis.gov.in	New Delhi
4.	BIS / TED 14	Air and Space Vehicles	Transport Engineering Department	Shivam Aggarwal	ted14@bis.gov.in	New Delhi