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**MIC**

# Satellite Regulatory Framework in Japan

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**1** Introduction

**2** Space Policies in Japan

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## MIC's Roles on Radio Communication field

- **Spectrum Management**
  - Establishment of Frequency Assignment Plan in Japan
  - Publication of Information on Frequency
- **Spectrum Monitoring**
- **Licensing**
- **Satellite Network Coordination**
  - Maintenance of satellite network filings
  - Coordination between Japan and other Administrations
- **Activities for WRC and Standardization**

For more information, please visit <http://www.tele.soumu.go.jp/e/index.htm>



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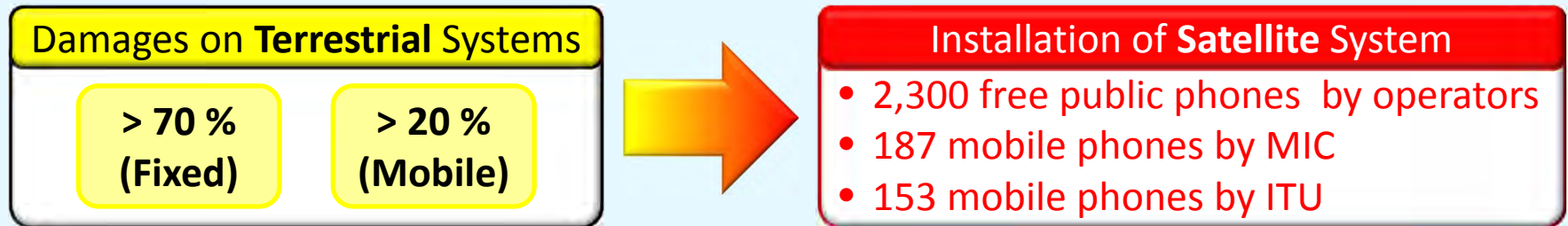
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## 1. Importance of Satellite Systems

### ➤ Tolerance to Natural Disasters

- Our Experiment on the Great East Japan Earthquake on March 11, 2011



[Ref.] White Paper 2011 on Information and Communications in Japan

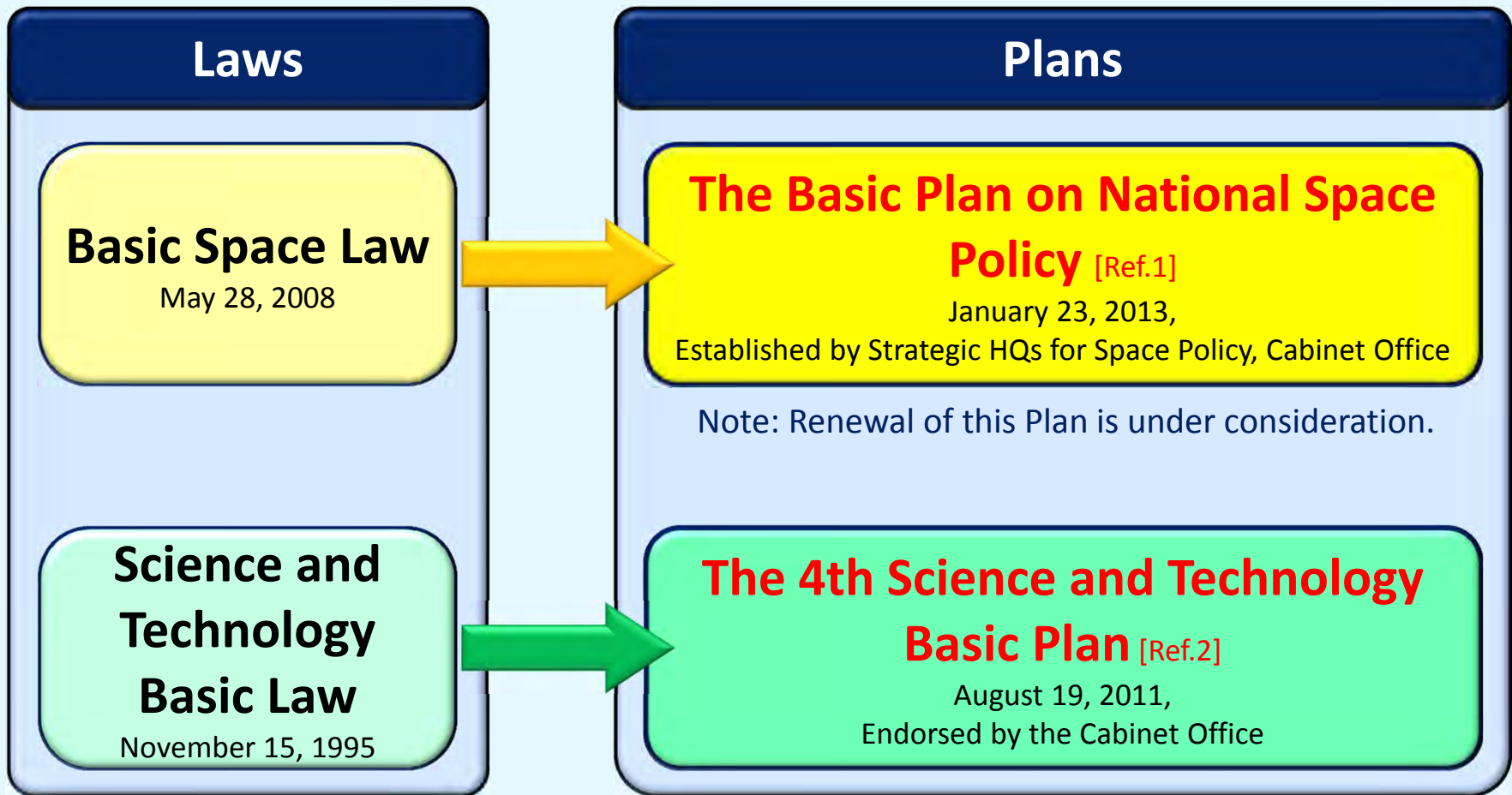
### ➤ Advancement of Communication & Broadcasting satellite Services

- Super Hi-Vision Broadcasting Satellite Service (4K/8K)

The Roadmap of 4K/8K	
2014	4K Broadcasting Satellite Service (Trial) [World Cup Soccer]
2015	4K Broadcasting Satellite Service
2016	8K Experimental Broadcasting Satellite Service [The Olympics in Rio]

[Ref.] White Paper 2014 on Information and Communications in Japan

## 2. Regulatory Structure for development of National Satellites



[Ref.1] <http://www8.cao.go.jp/space/plan/plan-eng.pdf>

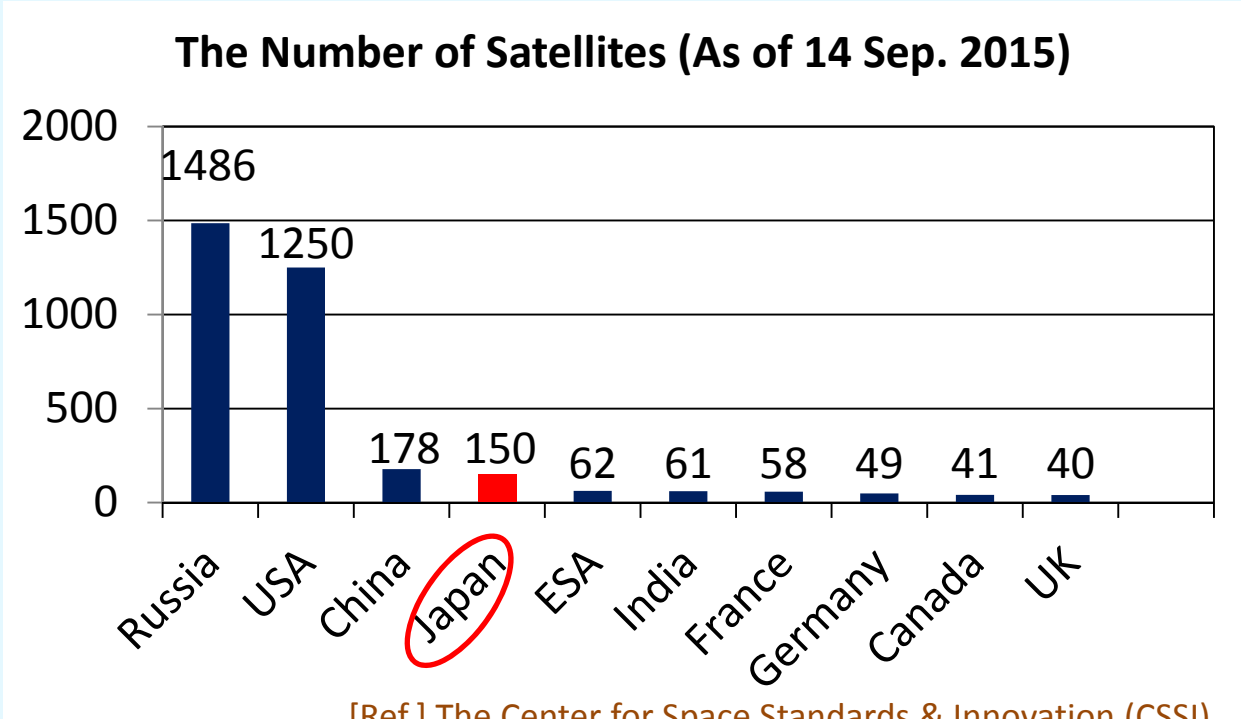
[Ref. 2] [http://www.mext.go.jp/component/english/\\_icsFiles/afieldfile/2012/02/22/1316511\\_01.pdf](http://www.mext.go.jp/component/english/_icsFiles/afieldfile/2012/02/22/1316511_01.pdf)

## 3. Facts about Japan

**150 satellites**

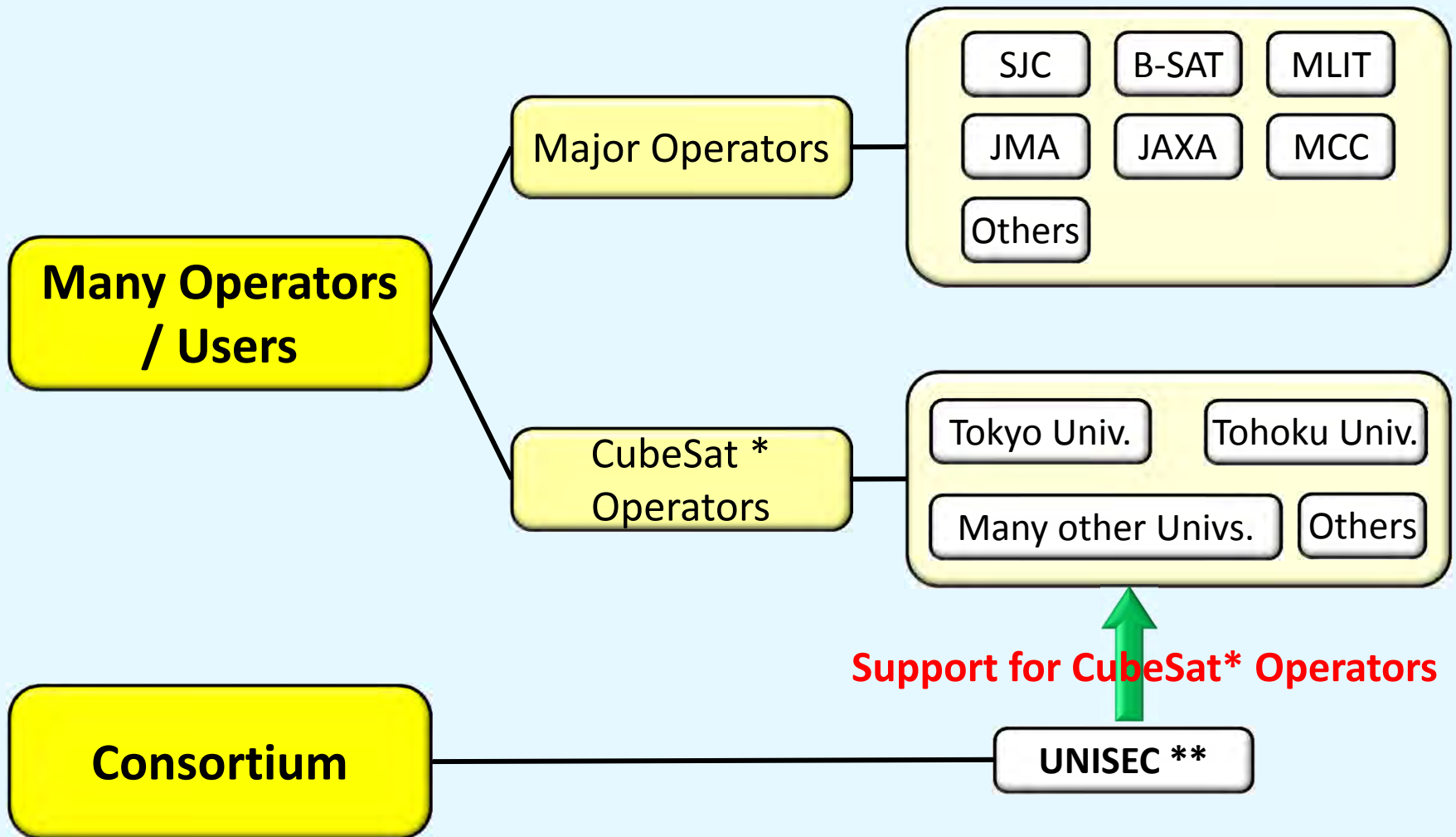
**199 filings (GSO)**

**72 filings (NGSO)**



[Ref.] The Center for Space Standards & Innovation (CSSI)





CubeSat \* = Nanosatellite and Picosatellite

UNISEC \*\* = University Space Engineering Consortium

## 4. Recent Launches of Satellites

[Ref.1] <http://www.data.jma.go.jp/mscweb/en/himawari89/>

[Ref.2] <http://global.jaxa.jp/projects/sat/hayabusa2/>

[Ref.3] <http://global.jaxa.jp/projects/rockets/htv/index.html>

### HIMAWARI 8

[Ref.1]

### HAYABUSA 2

[Ref.2]

### KOUNOTORI 5 (HTV\* 5) [Ref.3]



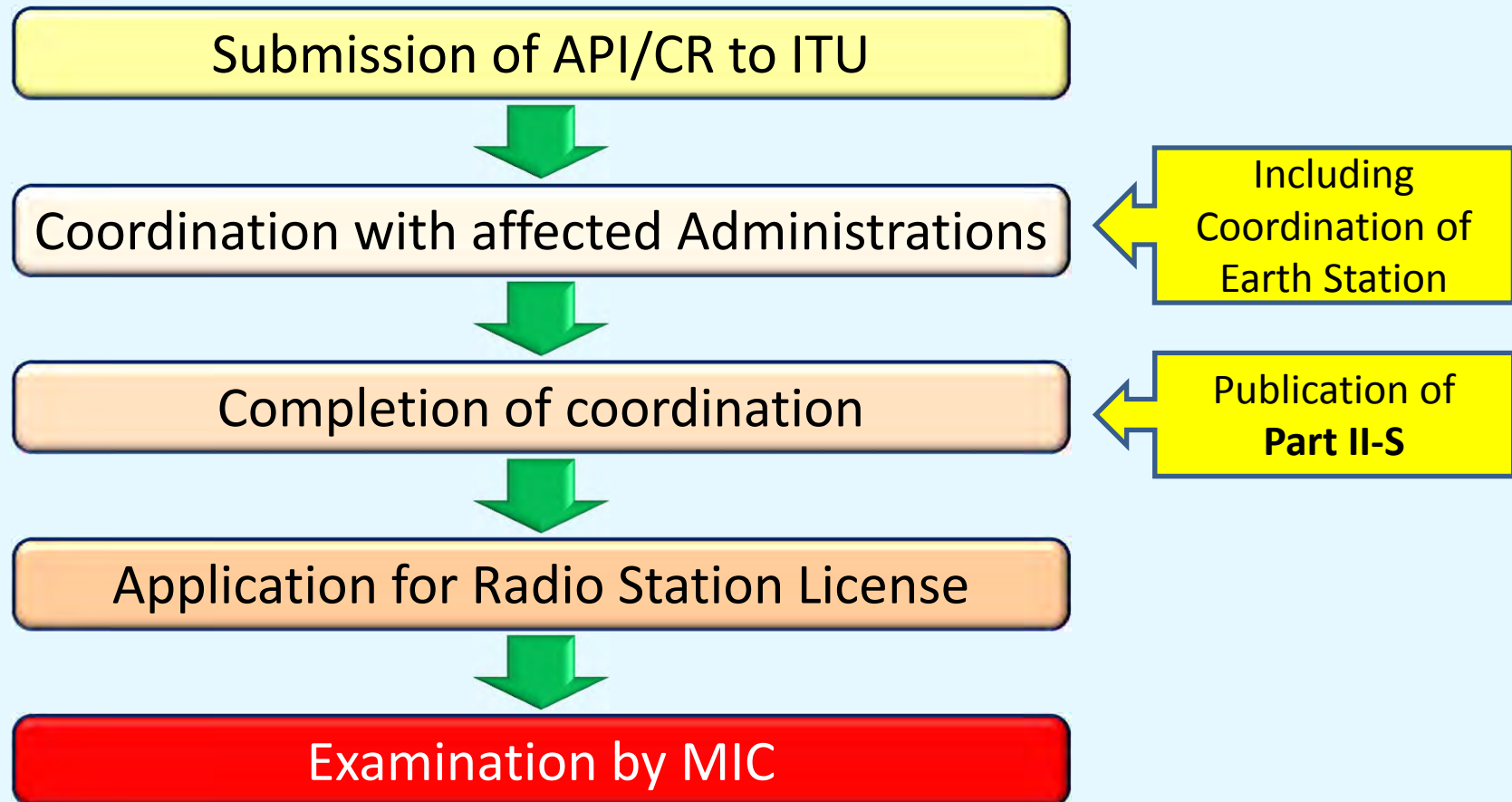
<b>Orbit</b>	140.7E	NGSO	NGSO
<b>Frequency</b>	UHF, Ku, Ka bands	X, Ka bands	S band
<b>Mission</b>	Meteorological aid	Asteroid sample return (Deep space)	Delivery of Supplies to the ISS
<b>Launch</b>	October 7, 2014	December 3, 2014	August 19, 2015

HTV \* = H-II Transfer Vehicle



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## 1. Basic Flow for Issuing License of Space stations



## 2. Examination by MIC

**To avoid interference** to other radio stations of foreign administrations, MIC examines the followings;

### ➤ Coordination Status

- Applicant needs to submit evidence of completion of coordination. As such, publication of **Part II-S** information is necessary.
- As for **Earth station**, MIC requires agreements by all affected Administrations.

### ➤ Conformity with results of coordination

- Specification of radio station under application shall meet results of coordination.
- MIC examines (1) **Orbital position**, (2) **Radio service**, (3) **Frequency range**, (4) **Service area**, (5) **Class of station**, (6) **EIRP**, and (7) **EIRP density**.
- MIC also checks conformity with **Technical/Operational Condition** established between Japan and other Administrations, if necessary.

## 3. Problem & our Solution

In some cases, coordination is **NOT** complete.

MIC requires the applicants to submit any evidence to ensure that radio station doesn't cause interference to other radio stations.

Examples of evidence:

1. Technical analysis to ensure no interference
2. Conformity with specifications of existing satellite  
(Note: It is necessary that existing satellite operates for long term and that there is no report for interference from other operators. )

When MIC verifies the evidence ...

MIC issues a radio station license with condition **“The use of frequency is limited only when no interference to other radio stations is ensured until coordination among other administrations is complete.”**

## 4. Offer for Public Application

### Radio Law

Established on May 2, 1950

**To ensure transparency** for licensing process

#### Application for space station

- (1) established for the purpose of conducting telecommunication service; and
- (2) Uses frequency for which the Minister issues a public notice

**shall be submitted within the period specified in the public notice of the Minister.**



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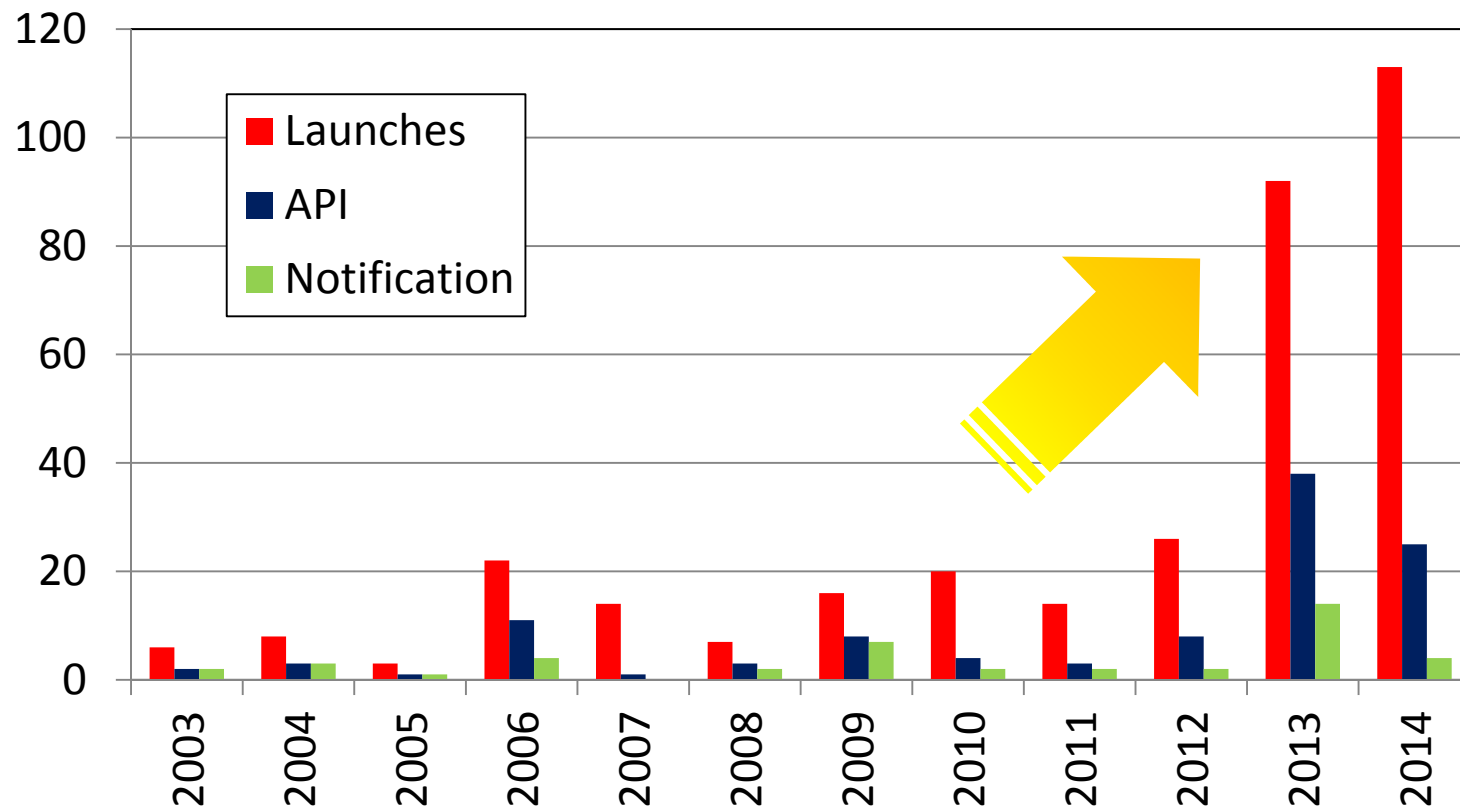
5 Conclusion



## Rapid Growth of CubeSat\*

CubeSat \* = Nanosatellite and Picosatellite

### Nano- & Pico- satellite launches and ITU filings



[Ref.] Report ITU-R SA.2348 "Current practice and procedures for notifying space networks currently applicable to nanosatellites and picosatellites"

CubeSat \* = Nanosatellite and Picosatellite

### Problems

- CubeSat\* Operators/Users are unfamiliar with regulations and coordination procedures.
- This leads to unnecessary efforts and long period for completion of coordination among other administrations.

As one of  
solutions...

- Japan is at work on developing “**Guidelines**” on regulations, coordination procedures and licensing process for CubeSat\* operators/users.
- Draft Guidelines will be reviewed by UNISEC members for improvement.

## WRC-15 AI 9.1 Issue 9.1.8

Resolution **757 (WRC-12)** invites ITU-R to examine the procedures for notifying space networks and consider possible modifications to enable the deployment and operation of nanosatellite and picosatellite.

**ITU-R WP 7B** developed two Reports;

- SA.2312** Characteristics, definitions and spectrum requirements of nanosatellites and picosatellites, as well as systems composed of such satellites
- SA.2348** Current practice and procedures for notifying space networks currently applicable to nanosatellites and picosatellites

**WRC-15**  
(November 2015)

**New Agenda Item for WRC-19 ?**

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- 1 Mutual cooperation** to accelerate completion of satellite networks coordination is necessary for smooth process of licensing.
- 2 Educational activity** on regulation/procedures for coordination for CubeSat\*, since the CubeSat operators/users are unfamiliar with them and period before launching CubeSat is generally short.

CubeSat \* = Nanosatellite and Picosatellite



**Thank you very much  
for your attention !**