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Response to Telecom Regulatory Authority of India Consultation Paper on In Flight Connectivity (CP, 14/2017)



Internal Document

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Figure 1: AMSS Networks Architecture 11

1. Introduction

The Telecom Regulatory Authority of India have published :Consultation Paper on In Flight Connectivity, dated 29th September 2017, referenced as Consultation Paper 14/2017. The Consultation Paper lists 18 questions stated as `Issues for Consultation_ which can be found in Section 2. Certain questions have referenced parts of the Consultation Paper; Section 3 includes the necessary reference material.

Comments on the Consultation need to be submitted by 27th October 2017.

2. Issues for Consultation

2.1. Q1

Which of the following IFC services be permitted in India?

- a) Internet Services
- b) Mobile Communication services (MCA service)
- c) Both, Internet and MCA

RC recommends that India should encourage an unrestricted and competitive economy. RC can support voice connectivity through Smart phone apps (530million smart phone users by 2018 - Zenith media survey 16/10/2017). It should, however, be noted that MCA will require tighter controls than Internet Services, as MCA can conflict with ground telecommunications. MCA encourages people to have phones switched on; this service can interfere with home networks when nearer the ground. RC suggests the correct approach would be to permit both Internet and MCA, but with MCA to be effectively controlled per the recommended approach provided in Q3 below.

2.2. Q2

Should the global standards of AES/ESIM, shown in Table 2.1, be mandated for the provision of AMSS in Indian airspace?

RC concurs.

2.3. Q3

If MCA services are permitted in Indian airspace, what measures should be adopted to prevent an airborne mobile phone from interfering with terrestrial cellular mobile network? Should it be made technology and frequency neutral or restricted to GSM services in the 1800 MHz frequency band, UMTS in the 2100 MHz band and LTE in the 1800 MHz band in line with EU regulations?

Given the extensive testing and substantiation of the use of Mobile devices onboard aircraft conducted in Europe and UK, RC believes that India should adopt the measures as currently used in these jurisdictions. This includes the altitude service ceiling of 3000 meters in ascent and 5000 meters in descent

RC suggests that MCA services in Indian Airspace should allow the use of both 1800 MHz and 2100 MHz in order for the service to be accessible to the greatest number of the modern COTS mobile handset devices. The MCA service providers currently offering services globally have service solutions which are working in both frequencies and RC recommends that this policy should also be adopted in India.

2.4. Q4

Do you foresee any challenges, if the internet services be made available gate to gate i.e. from the boarding gate of the departure airport until the disembarking at the arrival airport?

RC believes that gate to gate is the correct approach and we do not foresee any major challenges. We understand there is significant consensus from airlines on this issue as well. Communications providers are actively engaging with regulatory and airport authorities to achieve gate to gate connectivity and these bodies are open to this adoption.

Other nations, e.g. UK, USA, allow gate to gate operations for IFC services on national scale, without the need to gain approval from each individual airport.

2.5. Q5

Whether the Unified Licensee having authorization for Access Service/Internet Service (Cat-A) be permitted to provide IFC services in Indian airspace in airlines registered in India?

RC concurs and believes Q.7 is the correct approach to adopt.

2.6. Q6

Whether a separate category of IFC Service Provider be created to permit IFC services in Indian airspace in airlines registered in India?

RC concurs and believes Q.7 is the correct approach to adopt.

2.7. Q7

Whether an IFC service provider be permitted to provide IFC services, after entering into an agreement with the Unified Licensee having appropriate authorization, in Indian airspace in airlines registered in India?

RC strongly believes this is the correct method of engagement from an IFC perspective. RC recommends that separate Unified Licensees be appointed by the Indian Government for the different satellite bandwidths and frequencies. This will ensure an open, competitive market and allow airlines access to different grades of satellite services thus enabling varied and competitive service offerings to passengers. RC further believes that the Indian Government must regulate and direct that IFC services are provided by established and reputable service providers having global expertise and experience, as this will not only ensure that there is a consistent approach globally but also that any issues are swiftly identified and correctly addressed per industry standards. A localized service provider will lack the relevant expertise and experience offered by reputable global IFC service providers. This approach will also enable the Indian Government/Unified Licensees to maintain control and ownership of a selected number of qualified license holders thus not only lowering the cost of control, but ensuring efficient use and application of the IFC service in India.

2.8. Q8

If response to Q.7 is YES, is there any need for separate permission to be taken by IFC service providers from DoT to offer IFC service in Indian airspace in Indian registered airlines? Should they be required to register with DoT? In such a scenario, what should be the broad requirements for the fulfillment of registration process?

If Option 7 is applied, RC does not believe this will be necessary. The Unified Licensee will take responsibility for ensuring that all rules and guidelines established by DoT for the provision of the IFC service are followed and adhered to. Once the DoT legislates and implements the rules and regulations governing the use and provision of the IFC services, the Unified Licensee will be responsible for ensuring compliance by the service providers. The DoT will still have overall regulatory authority and ownership for policing enforcement of the internet service provision in India, but will delegate the policing of each and every service provider to the Unified Licensee.

2.9. Q9

If an IFC service provider be permitted to provide IFC services in agreement with Unified Licensee having appropriate authorization in airlines registered in India, which authorization holder can be permitted to tie up with an IFC service provider to offer IFC service in Indian airspace?

Per Q7 above, RC suggests that the Unified Licensees authorize and grant licenses to only those IFC service providers who have global expertise and experience in providing such services to airlines. IFC services should not be allowed to be resold through unauthorized organizations not formally approved or internationally recognised. There are a number of experienced international providers that are positioned to offer the best product and service, and the Unified Licensees should authorize only such providers. This would prevent inexperienced non-aviation-qualified entities offering such services in India.

2.10.Q10

What other restrictions/regulations should be in place for the provision of IFC in the airlines registered in India?

Per Q1 above, RC recommends that the provision of IFC be unrestricted subject to control of MCA per Q3 above.

2.11.Q11

What restrictions/regulations should be in place for the provision of IFC in the foreign airlines? Should the regulatory requirements be any different for an IFC service provider to offer IFC services in Indian airspace in airlines registered outside India vis-a-vis those if IFC services are provided in Indian registered airlines?

RC does not believe that any restrictions/regulations for foreign airlines should be applied and such restrictions would be wholly inappropriate. All airlines have a responsibility to comply with IFC provisions in line with their National regulations. Currently, most countries do not impose any restrictions on foreign airlines providing IFC services over their air territory.

As referenced in the Chicago Convention.

“any authorized entry of aircraft of a contracting State into the territory of another contracting State or authorized transit across the territory of such State with or without landings shall not entail any interference therewith by or on behalf of such State or any person therein.” (Article 27, Chicago Convention, 7th December 1944).

“Aircraft of each contracting State may, in equipment or over the territory of other contracting States, carry radio transmitting apparatus only if a license to install and operate such apparatus has been issued by the appropriate authorities of the State in which the aircraft is registered. The use of radio transmitting apparatus in the territory of the contracting State whose territory is flown over shall be in accordance with the regulations prescribed by that State.” (Article 30(a), Chicago Convention, 7th December 2017).

Therefore, in terms of communications, there should be no interference or additional regulations imposed for aircraft from another ICAO state.

Interference or onerous regulation of a foreign airline has the potential to initiate reciprocal restrictions to be applied to Indian registered aircraft as they overfly other national airspace where they are in disagreement with the Indian regulatory authority.

Additionally, reference is made to further regulation of visiting aircraft by the International Telecom Union, Radio Regulations, Article 39.7.

39.7 í 3 Member States undertake not to impose upon foreign aircraft stations or aircraft earth stations which are temporarily within their territorial limits or which make a temporary stay in their territory, technical and operating conditions more severe than those contemplated in these Regulations. This undertaking in no way affects arrangements which are made under international agreements relating to air navigation, and which are therefore not covered by these Regulations.

2.12.Q12

Do you agree that the permission for the provision of IFC services can be given by making rules under Section 4 of Indian Telegraph Act, 1885?

RC concurs.

2.13.Q13

Which of the options discussed in Para 3.19 to 3.22 should be mandated to ensure control over the usage of IFC when the aircraft is in Indian airspace?

3.21 As a third option solution, traffic to and from user terminals in Indian airspace may be sent to a node owned and operated by an Indian entity to address the requirement of lawful interception directly or in mirror mode.

3.21 is acceptable to RC. This approach would produce an unrestricted and competitive global market for communications.

2.14.Q14

Should the IFC operations in the domestic flights be permitted only through INSAT system (including foreign satellite system leased through DOS)?

No. RC believes that due to the complexities of the inflight connectivity, the use of experienced and established global providers is the best approach to give the best service to the passengers. Additionally, to enable Indian registered airlines to have competitive pricing from IFC providers, an unrestricted market should be established. A restricted market will impinge the economy and disincentivize passengers from using the service.

2.15.Q15

Should the IFC operations in international flights (both Indian registered as well as foreign airlines) flying over multiple jurisdictions be permitted to use either INSAT System or foreign satellite system in Indian airspace?

RC believe that due to the complexities of the inflight connectivity the use of established global providers is the best short term approach to give the best service to the passengers and enable a quick introduction to service. Additionally, for airlines to agree a competitive price with IFC providers an unrestricted market should be established.

On a long term basis, the introduction of INSAT to the IFC market should be considered as a long term objective by the Indian Government, as the integration of INSAT with other foreign satellite systems is complex and could cause service disruption as an aircraft swaps from one system to the other.

2.16.Q16

Please suggest how the IFC service providers be charged in the following cases?

- a) Foreign registered airlines.

No charge should be enforced against foreign airlines entering Indian airspace for overflight. This procedure is standard practice globally, and may initiate other ICAO states impinging Indian registered aircraft. Furthermore, no fees, dues or other charges shall be imposed by any contracting State in respect solely of the right of transit over or entry into or exit from its territory of any aircraft of a contracting State or persons or property thereon (Article 15, Chicago Convention, 7th December 1944). When foreign aircraft land in India charges should be agreed between the satellite provider and the teleport provider only.

- b) Indian registered airlines.

The unrestricted and competitive market that should be established would allow pricing models to be agreed between the service providers and the Unified Licensee. Government charges should be direct to that Unified Licensee. Any revenues generated through the provision of internet services to passengers would be the responsibility of the Unified Licensee as they are the internet service provider.

2.17.Q17

Should satellite frequency spectrum bands be specified for the provisioning of the IFC services or spectrum neutral approach be adopted?

No, RC believe that with the rapid changing satellite technologies that a spectrum neutral approach would allow the Indian IFC market the flexibility to adopt new technologies and not have to revisit the regulatory engagement processes. In addition it will allow Indian airlines the capability to be pioneers for new technology without delay.

2.18.Q18

If stakeholders are of the view that IFC services be permitted only in specified satellite frequency bands, which frequency spectrum bands should be specified for this purpose?

RC believes in the concept of an unrestricted and competitive economy for the aviation industry. Therefore, RC would support the opening of all Satellite Frequency bands including L-Band, Ku band and Ka band. It would be desirable for the outcome of this consultation to not prohibit the future advancement of emerging technology, i.e. Low Earth Orbit (LEO) or Medium Earth Orbit (MEO). RC would strongly encourage the decided legislation to effectively allow the introduction of these technologies without a further legislative process.

India should consider the use of the International standards and approval processes as the basis for subsequent approval of IFC services in India.

3. Reference Material from Consultation

3.1. Table 2.1

Table 2.1

Global standards of
AES/ESIM

Sl. No.	Organization	Standards
1.	ITU	<ul style="list-style-type: none"> ¿ ITU-R M.1643 (06/2003) (For Ku band) ¿ ITU-R S.2357 (06/2015) (For Ka band) ¿ Resolution 156 (WRC-15) (For Ka band)
2.	ETSI	<ul style="list-style-type: none"> ¿ EN 302 186 (For Ku band) ¿ EN 303 978 (For Ka band)
3.	ECC	<ul style="list-style-type: none"> ¿ ECC Decision (05)11 (For Ku band) ¿ ECC Decision (13)01 (For Ka band)

3.2. Para 3.19 to 3.22

3.19 It should be ensured that the security concerns are fully addressed before permitting IFC. It should be possible to monitor the traffic to and from user terminal in Indian airspace if so desired by designated security agencies. To ensure Lawful Interception, one possibility can be to mandate the use of Indian Satellite System while travelling over Indian airspace. However, the issue of the availability of domestic satellite capacity has to be addressed. Moreover, foreign airlines may not like to switch to Indian Satellite System.

3.20 Another possibility could be to permit the use of either Indian Satellite System or foreign satellite leased through DOS. Under this option also, while over Indian airspace, airborne IFC equipment's should get connected to Ground Earth Stations located in India. Thus, it will help in exercising control over the usage on IFC when the aircraft is in Indian airspace.

3.21 As a third option solution, traffic to and from user terminals in Indian airspace may be sent to a node owned and operated by an Indian entity to address the requirement of lawful interception directly or in mirror mode.

3.22 The relevant issue here is which of the above option should be permitted for the IFC services in Indian airspace? In this aspect, IFC operation in a domestic flight (flight that flies within Indian airspace only) may need to be distinguished from that of an International flight (flight that flies in Indian airspace and beyond). One option could be that the IFC operations in the domestic flights could be permitted only through Indian satellite systems, while international airlines flying over multiple jurisdictions may be asked to use either Indian Satellite System or foreign satellite leased through DOS while it is in Indian airspace. Another option could be not to put any such restriction on the international airlines.

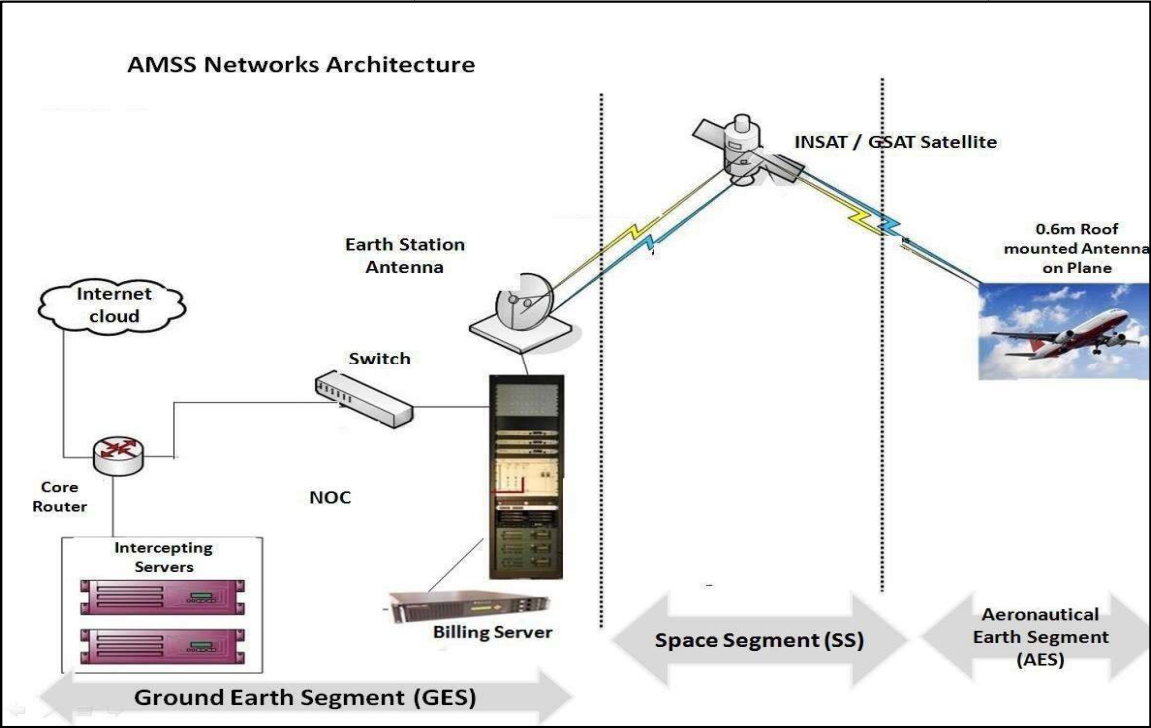


Figure 1: AMSS Networks Architecture