**3GPP TSG-SA WG1 Meeting #94e S1-211191**

**Electronic Meeting, 10 – 20 May 2021** *(revision of S1-21zzzz)*

Title: 22.926 P-CR: UE and Network operating in Aeronautical or Maritime Areas

Agenda Item: 7.5.1 (FS\_5GET)

Source: Samsung

Contact: erik.guttman@samsung.com

*Abstract: Airspace and the seas are a complex regulatory domain. This P-CR considers the regulatory implications for this scenario for UE and network operations.*

**Introduction**

Aeronautical Areas are defined in 22.926, 5.5. This P-CR suggests the implications for UEs in aircraft.

Networks operating in these conditions – e.g. in an aircraft, or on a high altitude platform – are also considered. Though this is not a common operating mode for a 3GPP network, to be complete, this scenario is evaluated.

**Proposal**

Please agree to make the following changes and add the following clauses to 22.926.

BEGIN CHANGE

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 22.011: Service accessibility

[3] https://www.un.org/depts/los/convention\_agreements/texts/unclos/part7.htm

[4] 3GPP TS 22.268: "Public Warning System (PWS) requirements"

[5] 3GPP TS 22.101: Service aspects; Service principles

[6] Global Maritime Distress and Safety System Manual, 2015 Edition, UN IMO, ISBN 978-92-801-1624-3.

[7] SOLAS Consolidated Edition, 2020, UN IMO, ISBN 978-92-801-1690-8.

[8] 3GPP TS 33.126: "Lawful interception requirements"

[9] Data Protection & Privacy Laws, <https://unctad.org/page/data-protection-and-privacy-legislation-worldwide>, Accessed: 19.10.20.

[10] ITU RADIO REGULATORY FRAMEWORK FOR SPACE SERVICES; https://www.itu.int/en/ITU-R/space/snl/Documents/ITU-Space\_reg.pdf

[11] UN Convention No. 10106 , "Convention on Offences and Certain Other Acts Committed on Board Aircraft", Tokyo, 14 September 1963, <<https://treaties.un.org/doc/db/Terrorism/Conv1-english.pdf>> Accessed 11.02.21.

[12] UN Convention No. 6456, "CONVENTION ON THE HIGH SEAS", Geneva, 1958. <https://sedac.ciesin.columbia.edu/entri/texts/high.seas.1958.html>> Accessed 11.02.21[13] Brisibe, T. C. "International law and regulation of aeronautical public correspondence by satellite", Doctoral Thesis, Faculty of Law, Leiden University, 2006.

[x] Title 47, Chapter I, Subchapter B, Part 22, Subpart H, §22.925 “ Prohibition on airborne operation of cellular telephones.” United States Federal Communications Commission.

NEXT CHANGE

## 7.3 Regulatory implications for UEs in Vessels

### 7.3.1 Description

A vessel in this clause refers to either a ship or aircraft. Vessels operate in both international and sovereign waters and airspace. At such times as the vessel is in international waters and airspace, the vessel’s passenger communication must comply with the regulations of the territory with sovereignty over the location they are in.

At the same time, the vessel and – this is the point - the UEs operating in that vessel may be subject to regulations *of the country of its registration*. The regulatory context changes when the ship is in port or the aircraft is on the ground. There it is clearly the case that sovereign regulations of the territory apply. However, even in this case, there are some regulatory aspects that relate to the country of registration.

NOTE: Unmanned Aerial Vehicles that are also a UE are not considered in this Technical Report.

### 7.3.2 Identified applicable regulatory requirements

The Tokyo Convention [11] states that the laws of the country of registration of the aircraft apply to acts commited on board.

The Convention on the High Seas [12] defines the notion of a ‘flag state’ registration of the vessel. These laws apply to the passengers on board. From Article 6 "Ships shall sail under the flag of one State only and, save in exceptional cases expressly provided for in international treaties or in these articles, shall be subject to its exclusive jurisdiction on the high seas."

This implies that passenger communication requirements of the vessel in international regions are subject to the regulations of the country of registration.

A separate regime applies to vessels in sovereign waters and airspace. In this case, international law is more complex. The Tokyo Convention Article IV states "A Contracting State which is not the State of registration may not interfere with an aircraft in flight in order to exercise its criminal jurisdication over an offence committed on board except in the following cases:

a) the offence has effect on the territory of such State;

b) the offence has been committed by or against a national or permanent resident of such State;

c) the offence is against the security of such State;

d) the offence consists of a breach of any rules or regulations relating to the flight or manoeuvre of aircraft in force in such State;

e) the exercise of jurisdiction is necessary to ensure the observance of any obligation of such State under a multilateral international agreement."

Thus, it is entirely possible for an aircraft to impose communication regulations of the registered state while at the same time complying with the above convention. This is analogous to the situation of a vessel in national waters.

While an aircraft is in sovereign airspace, regulations may apply to communications by passengers’ UEs. For example, over the United States of America, use of mobile telecommunications using a terrestrial radio access is not permitted. [x]

A third important scenario is the ship in port or an aircraft that has landed. In this case the sovereign regulations of the territory apply. However, there are – for telecommunications especially – certain conditions that are necessary to consider. If communications equipment on board the vessel has been certified by their registered state, these certification requirements may apply to communications rather than those of the territory where they are in port. [13]

The relevance to satellite communication arises due to the distinct regulatory implications based not only on the location of the aircraft or vessel, but also its status (is it airborne? Is it at port?)

### 7.3.3 Potential 3GPP approach

It is recommended that for UEs that are operating outside of sovereign territory, the context of the operation is taken into account, i.e. the national registration of the vessel will determine the regulatory regime applying to the UEs on the vessel.

When a vessel is operating in national waters, or sovereign airspace, the regulations of the corresponding territory apply *in addition* to those of the national registration of the vessel for communication by UEs in that vessel.

When a vessel is in port (i.e. a harbour or an airport), the regulations of the sovereign territory apply for communication by UEs on that vessel. The notable exception to this is that the communication equipment certification of the vessel may be those of the national registration of the vessel.

It is assumed that applicable regulations will be presented to passengers and that passengers will fully comply. From a 3GPP perspective there are no additional standards requirements to identify and comply with related to maritime-specific or airspace-specific regulations for UEs on board vessels.

END CHANGE

BEGIN ADDITION

## 8.x Regulatory implications of Networks operating in Aeronautical or Maritime Areas

### 8.x.1 Description

A network may be operated on a maritime vessel, an aircraft or high altitude aeronautical platform.

The network may be operated in sovereign waters or the high seas (for vessels), or sovereign airspace or international airspace (for an aircraft or high altitude platform.)

### 8.x.2 Identified applicable regulatory requirements

A network that is operated in a maritime vessel or an airborne aircraft may be subject to regulations that apply to the country to which the vessel or aircraft is registered. This is especially the case where the vessel is in the high seas (beyond any sovereign waters), or for aircraft in international airspace.

A network that is operating in an airborne aircraft that is in sovereign airspace may be subject to regulations of that airspace. [11] Similar considerations apply to vessels in sovereign waters.

An aircraft that has landed or a vessel in port essentially operates on sovereign territory using the familiar laws concerning telecommunications of that country. In addition, the aircraft’s equipment certification may have to comply with the national standards (e.g. for emissions.)

For the 3GPP system it is difficult to determine which sovereign territory the vessel is operating in and impossible to determine which country a vessel is registered to. It is therefore assumed that the operator of the network in the vessel ensures that a correct Mobile Country Code (MCC) is used by the network and that regulations that apply are those for the country or territory represented by that MCC.

Notwithstanding the above, an operator if a network on a vessel may check with regulatory bodies in the country represented by the MCC whether services/features such as emergency calls, public warning services, or lawful intercept are also applicable when the vessel is in the high seas (beyond any sovereign waters), or for aircraft in international airspace.

### 8.x.3 Potential 3GPP approach

It is assumed that applicable regulations will be considered by the operators of the networks on the airborne platform or maritime vessel, and that the network operator will fully comply. From a 3GPP perspective this implies that the network on the vessel uses the correct MCC and that the regulations apply of the country or sovereign territory related to that MCC. there are no standards requirements to identify and comply with airspace-specific or maritime-specific regulations.

An MCC that is broadcast by a network on a vessel may also be received by UEs that are not in/on the same vessel and are subject to different regulations (e.g. UEs on a nearby other vessel). This implies that a UE should not determine what regulatory requirements apply solely based on a received MCC.

END ADDITION