**3GPP TSG SA WG 1 Meeting #104 S1-23xxxx**

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**Source: Deutsche Telekom AG, Nokia**

**pCR Title: Update of general functional service requirements**

**Draft Spec: 3GPP TS 22.137 v.1.0.0**

**Agenda item: 7.1.2**

**Document for: Approval**

**Contact: Vasil Aleksiev, Vasil dot Aleksiev at magenta dot at**

*Abstract: This pCR proposes update of general service requirements*

**1. Introduction**

At 3GPP SA1#103 additional consolidated potential requirements were agreed and these need to be introduced into normative work.

It is important also to align clause 5 with the scope of the sensing specification and use functional requirements in the heading.

Usage of unlicensed spectrum depends on local regulation and that is why there is also proposal to update the related requirement with adding “subject to local regulation” in it.

**2. Reason for Change**

Adding of the agreed general CPRs from the FS\_Sensing study in general subsection is needed to finalize normative work.

**4. Proposal**

It is proposed to agree the following changes to 3GPP TS 22.137 v.1.0.0.

\* \* \* First Change \* \* \* \*

# 5 5G wireless sensing service functional requirements

## 5.1 Description

The 5G system is expected to meet the service requirements for 5G wireless sensing service, which provides capabilities for sensing one or more objects in the environment, monitoring environmental conditions, and human motion and gestures to enable more diversified applications.

The 5G wireless sensing service includes the collection of 3GPP sensing data, secure delivery of the 3GPP sensing data for processing, and secure exposure of the sensing result to trusted third-party. In some scenarios, non-3GPP sensing data can also be used to improve 3GPP sensing service.

It is important to consider energy efficient sensing operations which can includetemporarily disabling sensing transmitters and receivers that are not involved in sensing and communication operations or adjusting the sensing operation parameters (e.g., sensing frequency) to minimize energy consumption. Furthermore, the coordination between the sensing transmitters/receivers is expected to be considered for interference management.

When introducing sensing technology as a new 3GPP system capability, new considerations on authorization for service access and operation access, data confidentiality, data integrity, and user privacy are needed, to ensure that these aspects are taken into account when deriving service requirements.

The following requirements provide guidance on specific 5G wireless sensing capabilities.

## 5.2 Requirements

### 5.2.1 General

The 5G system shall be able to provide sensing service to detect, identify and/or track one or more objects (e.g., UAVs, birds) and the environment around the object(s).

Editor’s note: “Identify” is FFS.

Based on operator’s policies, operator’s control and regulation, the 5G system shall be able to collect 3GPP sensing data from sensing receivers for processing.

The 5G system shall be able to provide 5G wireless sensing service in a target sensing service area location using sensing transmitters and sensing receivers.

Subject to regulation and operator policy, the 5G network shall be able to activate, configure, and deactivate 5G wireless sensing based on parameters such as location and network conditions (e.g., network load).

Subject to operator’s policy, the 5G system may be able to use sensing assistance information to derive the sensing result.

Subject to user consent, regulation, and operator’s policy, the 5G system shall be able to collect non-3GPP sensing data from authorized non-3GPP sensors and securely provide it to 5G network.

Subject to user consent, regulation, and operator’s policy, the 5G system should support the joint processing of the 3GPP sensing data and non-3GPP sensing data to derive a combined sensing result.

The 5G system shall support continuity for 5G wireless sensing service (e.g., for sensing a moving object).

Subject to operator’s policy, the 5G System shall be able to provide the 5G wireless sensing service in case of roaming.

Subject to regulation and operator’s policy, 5G network shall provide prioritization among 5G wireless sensing services as well as prioritizing between communication and sensing services.

Subject to local regulation, the 5G network shall enable UEs without 5G coverage to use unlicensed spectrum to provide 5G wireless sensing service.

Subject to regulation, the 5G network shall enable UEs supporting V2X application to perform 5G Wireless sensing when not served by RAN using the allowed ITS spectrum and unlicensed spectrum.

\* \* \* End of Changes \* \* \* \*