**3GPP TSG-SA WG1 Meeting #98e S1-221173**

**Electronic Meeting, 9 – 19 May 2022** *(revision of S1-22xxxx)*

**Source: Hansung University, LGUplus, KT, ETRI**

**pCR Title: Pseudo-CR on a use case of automatic monitoring of smart station**

**Draft Spec: 3GPP TR 22.890 v 0.5.0**

**Agenda item: 7.1**

**Document for: Approval**

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*Abstract: A new use case is proposed to make automatic monitoring of railway smart station. It is carried out through dozens of CCTVs, a controller staff could not check all the CCTVs at a moment. To assist monitoring CCTV, an AI system gives help to the controller. The system examines dozens of CCTVs, determines an abnormal situation, and sends a warning message to the controller when the situations occurs such as illegal riding, neglected wandering of suspicious object, unauthorized entry, or user falls from the platform.*

**1. Introduction**

This pCR suggests a use case of automatic monitoring of railway smart station for TR22.890.

**2. Reason for Change**

A use case should be provided to make automatic monitoring for railway smart station.

**3. Conclusions**

<Conclusion part (optional)>

**4. Proposal**

It is proposed to agree the following changes to 3GPP TR 22.890.

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

## 6.x Automatic monitoring of railway smart station

### 6.x.1 Description

The monitoring of railway station is a hard work. It should be made in 24 hours a day, 7 days a week. It is carried out through dozens of CCTVs, a controller could not check all the CCTVs at a moment. To assist monitoring CCTV, a AI system gives help to the controller. The system examines dozens of CCTVs, determines an abnormal situation, and sends a warning message to the controller when the situations occurs such as illegal riding, neglected wandering of suspicious object, unauthorized entry, or user falls from the platform.

### 6.x.2 Pre-conditions

Some CCTV’s are pre-designated to aim each part of the platform in case of emergency situation.

A system of AI is trained to provide automatic monitoring functions for the railway smart station.

Some abnormal cases are pre-defined in the system.

### 6.x.3 Service Flows

1. The CCTVs in the station provide video on the situation of the station.

2. The AI system takes a look the video data from the dozens of CCTVs.

3. An abnormal situation is occurred. A passenger has fallen from the platform.

4. The AI system makes a alarm to the controller of the station to let him know the situation. The ​​system also sends a notification alarm to station staff who are close to the place where the situation occurred.

5. The staff arrives at the accident site, rescues passengers, and organizes the surrounding situation.

6. The controller is aware of the situation and contacts the train to prevent it from entering the platform.

7. The AI ​​system records the video, call history, and actions taken in the process of handling abnormal situations as data.

### 6.x.4 Post-conditions

Passengers are rescued, circumstances are cleared up, and trains are allowed to enter the platform.

The data recorded by the AI ​​system is later used in audits for handling the case.

### 6.x.5 Existing features partly or fully covering the use case functionality

The group management are fully covered by 5G system and MCX framework.

### 6.x.6 Potential New Requirements needed to support the use case

[R-6.x-1] The 5G System shall support delivering dozens of CCTV videos to the AI system.

[R-6.x-2] The 5G System shall be able to find people in a specific role in a designated area.

[R-6.x-3] The 5G System shall support sending notifications to people in a specific role in a designated area.

[R-6.x-4] The 5G System shall be able to record designated video streams, voice calls, communicated data, e.g. sensor and call history during specific time period in a designated area.

 [R-6.x-5] The 5G System shall be able to record designated video streams, voice calls, communicated data, e.g. sensor and call history between specific people in a designated area.

[R-6.x-6] The 5G System shall support emergency control or communication of nearby trains.