**3GPP TSG-SA WG1 Meeting #109 S1-250731**

**Athens, Greece, 17-21 February 2025** *(revision of S1-250204)*

**Source: NTT DOCOMO, TOYOTA, SK Telecom**

**pCR Title: Pseudo-CR on AI-based video analysis**

**Draft Spec: 3GPP TR** **22.870 v0.1.1**

**Agenda item: 8.1.2**

**Document for: Approval**

**Contact:** [**kenta.yamauchi.xe@nttdocomo.com**](mailto:kenta.yamauchi.xe@nttdocomo.com)

*Abstract: <provide a short description of the content>*

**1. Introduction**

Please see the use case below.

**2. Reason for Change**

This pCR introduce use case and requirements on AI-based video analysis for FS\_6G-REQ.

**3. Conclusions**

Define the requirements.

**4. Proposal**

It is proposed to agree the following changes to 3GPP TR 22.870 v0.1.1.

Changes on 731

* PR2 and PR 3 were removed
* In PRs, compute resources changed to computing resources
* Any indications on compute offloading **to network** were rephrased to compute offloading **to** **service hosting environment**

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

6 AI

Editor's Note: this clause will contain AI-related use cases.

## 6.X Use Case X: AI-based video analysis

### 6.x.1 Description

Some of the tasks traditionally performed by humans are expected to become more efficient, accurate, and ultimately automated using AI. One example of this is AI-based video analysis. More specifically, social infrastructure that has traditionally been inspected by the human eye, such as utility poles and guardrails, can be made more efficient using AI-based video analysis. Alternatively, analysing footage from in-car cameras with AI-based video analysis applications can notify drivers or remote operators in real-time about the approach of people or objects. In these scenarios, video data analysis may require significant processing resources, making it difficult to perform all processing solely with the resources of the devices. Therefore, it is considered useful for mobile networks to offload AI-based video analysis tasks to the network. This use case introduces the requirements for supporting these scenarios within the 3GPP system.

6.x.2 Pre-conditions

X is a vehicle equipped with cameras to capture the environment outside the vehicle while driving on roads for infrastructure inspection. It also has a communication module to use operator Z’s network.

Y is a business entity conducting infrastructure inspections and owns X as a vehicle for this purpose. Y holds a contract with operator Z and is provided with compute offload services utilizing resources within Z’s network based on requests to operator Z.

Z is a mobile network operator offering compute offload services utilizing resources within its own network.

6.x.3 Service Flows

1. Car X, equipped with cameras to capture the environment outside the vehicle, is on the move. As it drives, X records footage of infrastructure such as utility poles, traffic lights, and guardrails around the roads.
2. Y, the operator of X, launches a real-time infrastructure inspection application utilizing AI-based video analysis.
3. The infrastructure inspection application provider requests a compute offload service from mobile operator Z.
4. Mobile operator Z, upon receiving the request, sets up the routing from the cameras on X to the resources within the network and initiates processing resources to provide the compute offload service.
5. X transmits the camera footage to the resources within operator Z's network, where AI-based video analysis is performed. The results of the video analysis are sent to Y, and if any anomalies are detected, prompt action is taken.

6.x.4 Post-conditions

Y was able to apply AI-based video analysis to real-time infrastructure inspections by leveraging network-based processing resource offloading.

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

Solution for QoS modification based on communication requirements from application is specified in clause 4.15.6.6 of TS 23.502 [30].

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

[PR 6.x.6-001] The 6G system shall be able to provide means for authorized third parties to utilize computing resources in the service hosting environment.

[PR 6.x.6-002] The 6G system shall be able to provide means to decide allocation of computing resources in the service hosting environment based on both requests from third parties and availability of computing resources.

[PR 6.x.6-003] The 6G system shall be able to perform coordinated allocation of communication and computing resources.

\* \* \* End of Change \* \* \* \*