

# TESS Recommendations for the use of Vehicle Tracking Systems as a Security Communications Systems' tool

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## 1. Background on the proposed VTS standards.

In the TESS Project Charter (endorsed by the IASMN in Jan 2019), the standardization on Vehicle Tracking Systems (VTS), was defined as a priority within the overall Security Communications Systems (SCS) tools' standardization of the TESS Stream 2 project track.

A TESS VTS Working Group was started in Feb 2019, with the purpose to provide the TESS project with recommendations on VTS standardization. This Working Group consists of representatives from the five SCS technical service providers (UNHCR, UNICEF, WFP, ETC and DOS/OICT), UNDSS, and representatives from the UN Fleet Managers forum and the IASMN Road Safety Working Group.

This document summarizes the TESS recommendation to the IASMN, based on input from all stakeholders, including the TESS VTS Working Group.

## 2. Overall approach to VTS standards as a Security Communications Systems tool

In many organisations, vehicle tracking systems are primarily acquired, developed and managed for their fleet management. Often, within these organisations, VTS systems are adopted for security risk management purposes. At each organization's level, the fleet management business units drive their actual VTS system standards.

It is recognized that VTS systems can and should be a critical tool for the UNSMS (UN Security Management System). The use of some of the data from various VTS systems can support security and should facilitate/automate the way the Security Operations Centers (SOCs) monitor field missions' movements. This movement monitoring is currently still mainly done manually, with field missions calling to the SOCs to report on their vehicle positions via radio, mobile phones, various messaging systems or satellite phone voice calls.

In order to remain vendor agnostic and to protect the existing investments in VTS systems, we also recognize the fact that standardizing on the hardware level (tracking devices installed in the vehicles) and/or standardizing on a single commercial vehicle tracking platform, is not practical or feasible. As such we have approached the challenge of enabling the SOCs to monitor field missions using the VTS data on a more pragmatic basis:

a. We do not recommend a single hardware standard or single commercial monitoring platform for VTS. We recommend, however, that as a tool for the UNSMS, all vehicles used for field missions, whose movement is to be monitored, should have a tracking device which submits a subset of tracking data to be made available through a software interface to a single tool enabling SOCs to monitor the road missions.

The detailed specifications of the software interfaces between tracking systems of various agencies, in particular with respect to aspects of data protection and confidentiality, matters related to support, service continuity, potential migrations of tracking platforms are not addressed by this document and have to be duly considered and agreed upon before this system can be fully used as an UNSMS SCS solution.

b. Vehicles used for field missions should be equipped with a tracking device that can reliably transmit data to their respective tracking platforms, which, in turn, should provide an interface to the monitoring tool used by the SOCs.

c. SOCs will use a tool which enables them to monitor field vehicles missions by using a subset of tracking data provided by individual agencies. The role of individual agencies, in collaboration with TESS, would be in requesting their providers of tracking solutions to establish and maintain the software interfaces as per a set of generic technical specifications, outlined further below (technical details will be tested and agreed upon at a later stage). This will avoid the need to use different VTS tracking/monitoring systems for each of the physical VTS systems.

### 3. The TESS VTS recommendations

The TESS recommendations for a VTS standardization are as follows:

#### a. CONNECTIVITY:

Any vehicle whose movement is to be tracked during field missions, should have a tracking device that can reliably submit an agreed subset of tracking data to a single tool used by the SOC. These software interfaces can only be established (made available) when liabilities of parties involved, matters of data confidentiality and security, and other concerns have been fully addressed at the agency level.

If the vehicle is solely moving in a mobile phone covered area, it is sufficient the VTS only uses a mobile phone-based (GPRS) VTS system. If the vehicle is moving beyond areas covered by a mobile phone operator, the vehicle should have a satellite-enabled tracking device. In the latter case, it is recommended that the VTS system has a “least-cost” connectivity scheme: If mobile phone coverage is available, the VTS system should “ping” via the mobile phone system. If the mobile phone network is not available, the “ping” should go via a satellite system.

#### b. VEHICLE INSTALLATION:

For security (vehicle movement tracking) purposes, it is preferred the VTS unit is hard-wired into the vehicle as a fixed installation. Fixed installations often support additional features for the fleet managers (such as remotely disabling the vehicle for instance). Recognizing many organisations also use “portable” VTS units, which can be moved from vehicle to vehicle, these are excepted and supported within the proposed standards. It should be recognized that using “portable” VTS systems will require additional administrative tasks by the SOCs, which will have to manually map each physical unit to the car used in each mission.

#### c. SOFTWARE INTERFACE:

We recommend not to standardize a single hardware VTS system, neither on a single software tracking platform for fleet management purposes, but rather recommend on a software interface standard (based on an “API” – Application Program Interface), allowing different VTS hardware systems to communicate with a single and standardized SOC VTS monitoring tool.

As such, it is imperative that each individual VTS system supports an API interface, which allows SOCs to monitor road movements through their common standard SOC tool, through regular data transmissions (“pings”).

The API should provide the following information for each data transmission (if available from the VTS system):

- Timestamp of data transmission
- Tracking system identifier (vendor ID for hardware use in the car, e.g. “Novacom”, “Track24” etc.)
- Tracking unit ID (hardware ID number or serial number of the actual physical tracking device in the car) which is a unique system ID within the tracking system. In the management platform this will be translated to “agency, type of vehicle, number plate” etc..
- Vehicle GPS position
- Vehicle movement data (to be able to determine if the vehicle is actually moving during the time of the ping)
- Alarm flag and type (including a data field with the alarm data)

If supported by the VTS system: we recommend the ability to manually poll the originating VTS tracking system for the latest vehicle positions (as last registered by the VTS tracking system), from the centralized SOC tracking system. This manual poll should be a query to the data set in the originating VTS tracking system, and not be a poll from the individual tracking units in the car.

d. The UNDSS E-TA tool may be used as the centralized tool for monitoring of field mission by SOCs, provided it meets the functional requirements of SOCs (Terms of Reference are still being developed), and provided that the concerns above (e.g. related to data protection and confidentiality) have been discussed and addressed. At the same time, the

individual agencies will continue to operate their contracted VTS solutions, as they require for their internal needs. If UNDSS/UNSMS decides to use E-TA as the SOCs' centralized tool for vehicle movement tracking, it is recommended that E-TA develops the API interfacing with the different VTS tracking systems. This will allow the SOCs to monitor all vehicle movements using a single tool, independent from the hardware VTS systems used by the agencies.

#### 4. Comments and acknowledgements

- Vehicle Tracking Systems are being acquired, managed and developed by the Fleet Management authorities of various UN organizations. These organizations are continuously investing in their systems to ensure that their performance is in line with their business requirements.
- Owners of the commercial VTS contracts at the agency level acquire and develop their tracking solution with two main objectives: to improve fleet management and enhance safety and security of personnel. For this reason, any inter-agency initiatives or proposals for modifications, integrations, changes of specifications or use cases, etc. of should be validated and agreed upon by the owners of VTS contracts at the agency level. This validation process should be done on a continuous basis.
- Any development resulted from this recommendation, will require further assessment with regards to data confidentiality and data security. The agencies shall not be expected to abide to any of the future standards if their concerns regarding the data confidentiality and data security have not been duly examined and addressed. Until then, such developments, testing, piloting, implementation of solutions or standardization efforts cannot be considered as binding.
- As the primary business owners of the VTS systems, members of the UN fleet management forum and representatives of the NGO fleet management entities should continue to be involved in review of any ongoing/future studies, tests, specification exercises, review of tests, developments of intended standards with regards to VTS or provision/sharing of the VTS data. Such validations should be based on due assessments of the business requirements and concerns of the above entities and the service users. Any inter-agency development or standard should be based on results of such mutual efforts.
- Standardized Terms of Reference for SOCs are not available for review at this stage. The development of the Terms of Reference for SOCs and how the VTS system is to be used by the SOCs is a parallel discussion, led by the IASMN Working Group on Guidance and Procedures for Security Communications Systems.