Terms and Definitions

TISA Vision, Mission and Purpose

Our Vision - A world where traffic and travel information is 100% correct, 100% of the time on all roads

Our Mission - To lead the development of trusted traffic & travel standards and harmonized services for our members.

Our Purpose - Ensure travel is safe, efficient and sustainable for everyone, everywhere

TISA Value Proposition

For all Public and Private stakeholders in the Intelligent Transport System (ITS) value chain who want to ensure travel is safe, efficient and sustainable for everyone, everywhere.

Who want to ensure travel is safe, efficient and sustainable for everyone, everywhere

Our membership driven association connects all stakeholders to develop and maintain the standards, software and tooling in traffic & travel information and data quality accreditation

That By using TISA standards provides **seamless traffic and travel services** ensures interoperability worldwide & reduces costs for your organisation;

Allows you **to shape TISA standards** to your own user cases and needs;

Offers **new business opportunities** and facilitates networking with other organisations sharing the same goals;

Gives your organisation access to the **latest developments on all ITS standards** in a one-stop shop;

Supports your **preparation & compliance** to global ITS domain regulations

Our Global Membership

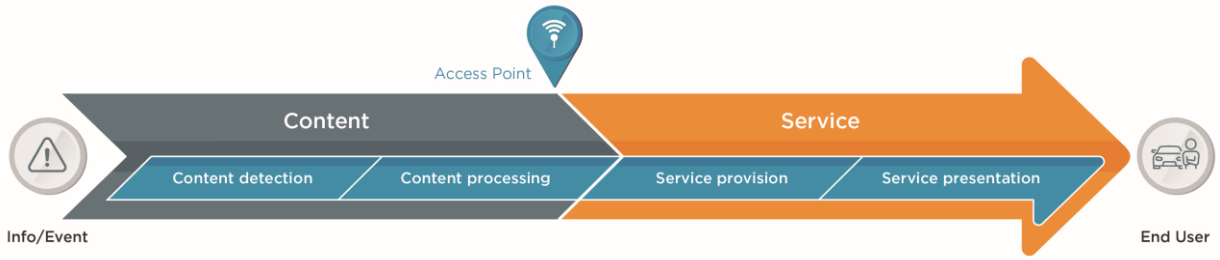
Our Value Proposition is for all public and private stakeholders in the Intelligent Transport System (ITS) value chain who want to ensure travel is safe, efficient and sustainable for everyone, everywhere. TISA Members include ITS Service and Solution Providers, User Device Manufacturers, Public Sector Stakeholders and Vehicle Manufacturers.

Terms and Definitions for the Traffic and Travel Information Value Chain

The entire process of detecting traffic incidents and gathering travel information all the way to presenting this content to the intended audience, which could be a traveller or the driver of a vehicle, involves many actors. The process is typically depicted in a value chain, as each step is considered to add a certain value compared to the previous step by processing, aggregation, and refinement of the information.

Depending on who is presenting the value chain, or the focus of the presentation, the different steps are shown with varying levels of granularity. This document presents a view of the value chain for Traffic and Travel Information (TTI) that has been harmonized and agreed within TISA.

The following figure shows the TTI value chain in the most simplified form.



At the highest possible level just two segments can be identified, namely **Content** and **Service**. The **Content detection** sub-segment comprises the actual observation of an incident, or the measurement of a traffic condition, together with the collection of such information. The **Content processing** sub-segment refines and prepares all data that has been detected and gathered. The **Service provision** sub-

segment prepares the content for the transfer to the intended recipient and takes care that the service is available in the service distribution area with the required reception quality[1]. The **Service presentation** sub-segment typically occurs in a device that contains a receiver, a decoder and a display screen.

The following generic figure is used by TISA to include the Information or Event and the End User as integral part of the value chain. It follows the strict notion of *Input-Processing-Output*, with a number of interfaces interconnecting the various processing stages.

This figure represents the TISA generic value chain for TTI in its most basic, 4-segment representation.

Definitions

Info, Event	A typical traffic situation (e.g. the traffic flowing normally on a given road) or an unusual incident (e.g. a traffic jam) or a local danger (e.g. fog).
Content detection	The observation of a typical traffic situation or the detection of an unusual incident with the help of measurement equipment. In some cases, such information could also be observed by humans (e.g. an accident as seen by a witness and reported to the police). Content detection also includes the gathering of info and events using some form of communication equipment.
Content processing	The accumulation of info or events in a content management system, where all information is processed and evaluated. This stage often involves some form of plausibility check and quality control.
Service provision	The processed content is enriched with content from other sources, reformatted and prepared for transmission to the End User, then transmitted as a service to the End User by some form of communication equipment, such as mobile communication (e.g. radio, mobile cellular systems) or wired communication (e.g. via Internet).
Service presentation	The Service is received with an appropriate receiver device, such as radio, mobile phone, navigation device or a personal computer. After reception, relevant messages are extracted from the service and rendered in to the form most appropriate for presentation to the End User (e.g. icons on a navigation devices map display, or message lists on a mobile phone, or audio output).
Access Point	An Access Point (AP) is a node in which ITS-related data are aggregated and published in the form of datasets. APs should facilitate access, easy exchange and reuse of transport related data.[2]

[1] also known as Level of Service, LoS

[2] For further details on Access Points for example in Europe, please follow https://napcore.eu/description-naps/

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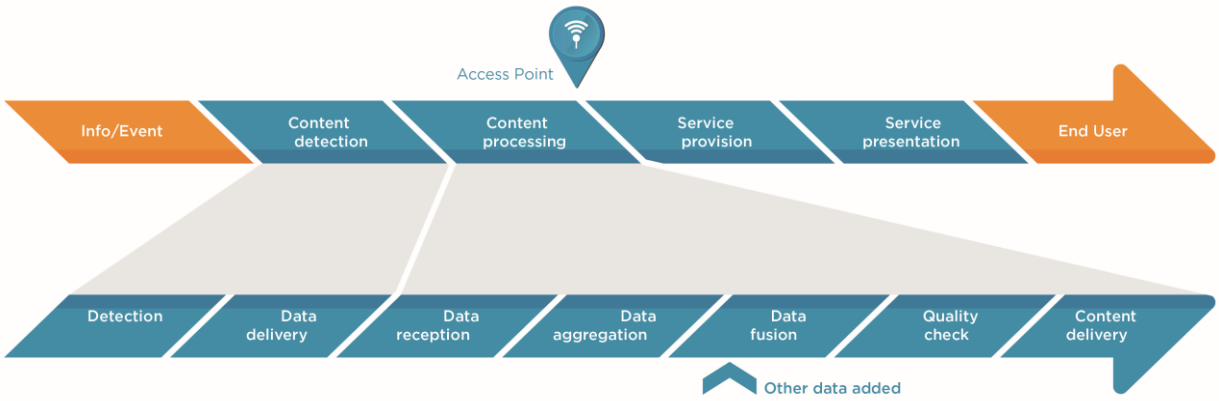

The Content segment expanded to show detailed functional sub-segments.

Definitions

Detection	The process of observing a measurement sample by means of technical equipment. The measurement sample could be observing a normal condition (e.g. measuring an average traffic flow on a motorway) or an abnormal condition (e.g. detecting an accident through a traffic camera). Detection could also involve human observation.
Data delivery	The process of transferring the detected measurement sample from the – often remote – measurement location through some communication equipment to a central place where data samples from different detection sites are gathered and processed.
Data reception	The process of collecting several measurement samples from the measurement locations at a central entity, where it is received through some communication equipment.
Data aggregation	The process of gathering the received measurement samples in a repository, which is often a computer database.
Data fusion	The process of combining raw data measurement samples from different means of detection (e.g. traffic cameras, loop detectors, human observation) into a representation of the traffic situation. The aim of the data fusion is to gather enough evidence to reconstruct a “picture” of the traffic situation that is as-close-as-possible to the reality.
Quality check	The process of plausibility checking on measurement samples and the reconstructed traffic situation with the goal of removing erroneous samples (which could be caused for example by equipment failure) or to eliminate wrong hypotheses about the traffic situation (e.g. excluding ice as the reason for slippage on the road when the outside temperature is 20°C).
Content delivery	The process of transferring the content to a service provider, which will take care of the distribution of the content to the End Users.

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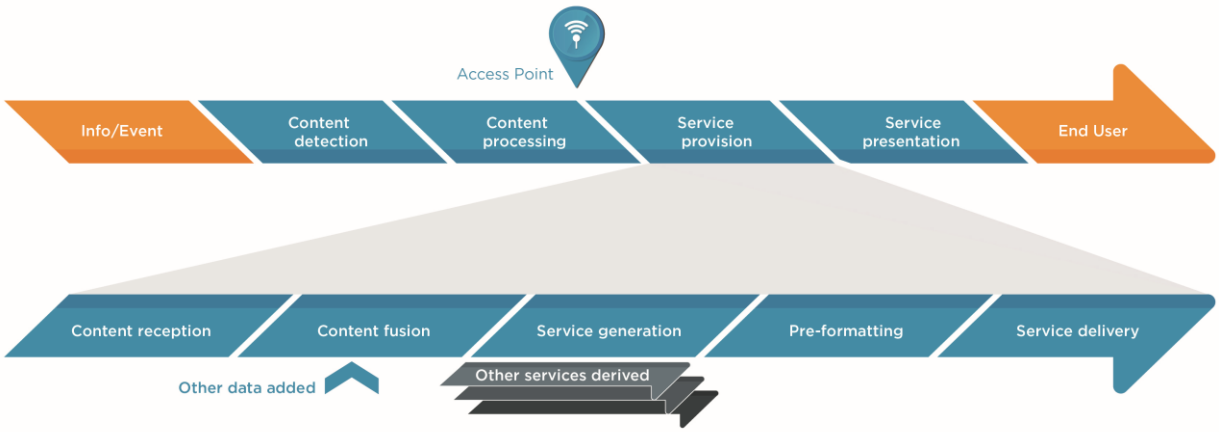

The Service provision sub-segment expanded to show detailed functional sub-segments.

Definitions

Content reception	The process of receiving content at the service provider. A service provider could obtain content from various content providers and through different communication channels (e.g. satellite links, internet, dedicated cable networks)
Content fusion	The process of combining the content from different content providers into a Service that can be consumed by the End User. Content fusion often involves some form of plausibility check and quality control across data from different content providers to ensure consistency of the content.
Service generation	The process of enhancing the content such that it can be delivered to the End User. This process often involves the addition of meta information about the service area covered, the type of content to be delivered, or information that guides the End User device in how to best present the content to the End User, depending on the output capabilities of the devices.
Pre-formatting	The process of “wrapping” the service in a way such that it can be transferred to the End User. This process could involve data compression for reducing the required bandwidth for the transfer of the content, or packaging the content in smaller data containers (data packets, such as for TCP/IP).
Service delivery	The transportation of the service (e.g. in the form of data packets) to the End User. This transport often involves some form of mobile (radio, cellular phone) or stationary (wired internet) communication networks.

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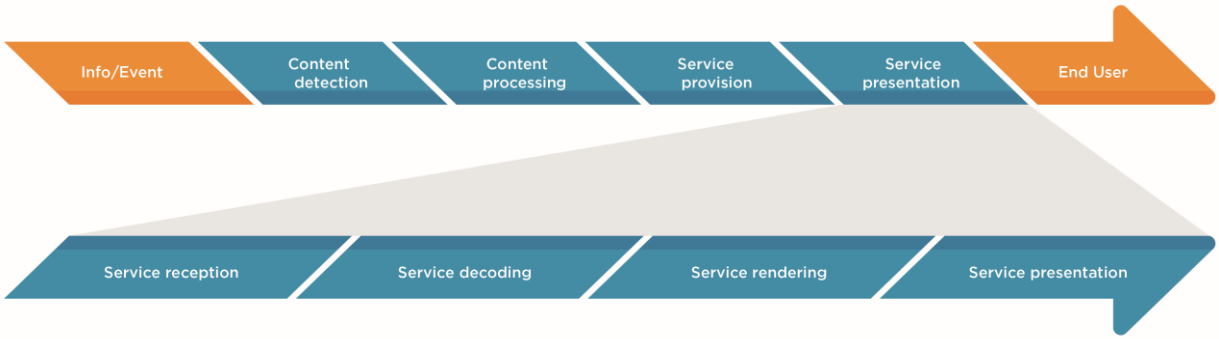
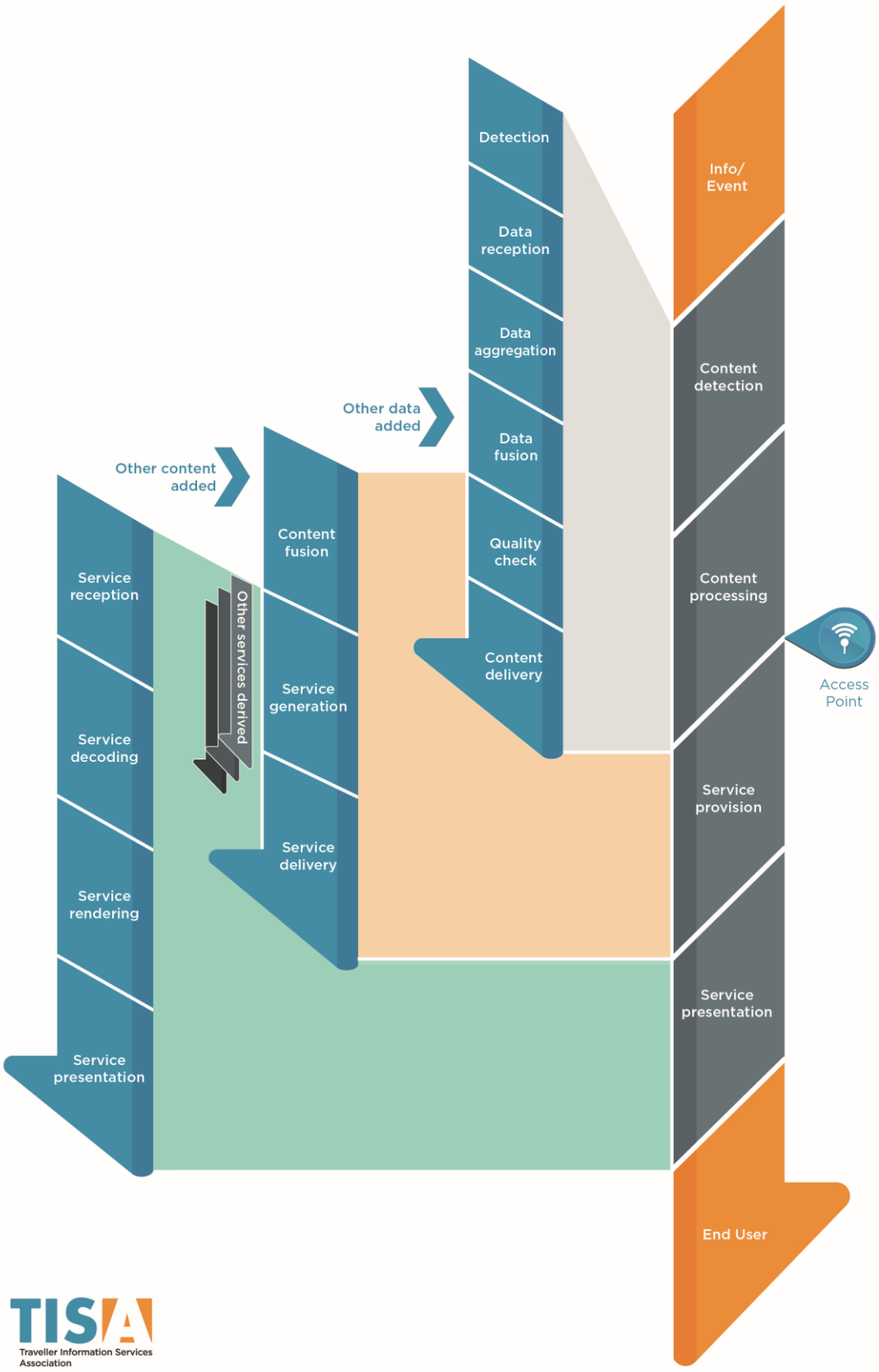


The Service presentation sub-segment expanded to show detailed functional sub-segments.

Definitions

Service reception	The process of collecting the service at the End User device. Depending on the way the service is distributed, service reception may involve radio receivers (e.g. FM or digital radio, mobile phones) or stationary communication equipment (e.g. a personal computer with a DSL modem).
Service decoding	The process of "unwrapping" the service from its packaging. This process may involve rebuilding the content that has been transferred as part of a service by reassembling the data packets received during the service reception process. At this stage, often some form of error detection is performed to ensure that all data has been received correctly. In case of transmission errors, data packets are discarded and the service decoder awaits new data packets. Otherwise, the interpretation of erroneous data packets and thus content could result in misleading information to the End User.
Service rendering	The process of preparing the content received as part of a service in a way that useful information can be presented to the End User. One and the same message (i.e. info or event) could for instance be displayed as an icon on a car navigation map if the device features a high-resolution graphical display, or as text message in case the device has only a few lines of alphanumeric display, or as an audible announcement in case the device has text-to-speech capabilities – all from one and the same content.
Service presentation	The process of presenting the info or event to the End User, using whatever capabilities the End User device has to offer (graphical or alphanumeric display, loudspeaker, etc.)

The definitions provided in this document may be used as a reference and should aid the communication between stakeholders along the TTI value chain.

The TISA generic value chain is based upon the experience of many members, mainly in the European context. TISA has a policy of sharing experience on a worldwide basis and additional/other value chain elements may be included in the future.

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