

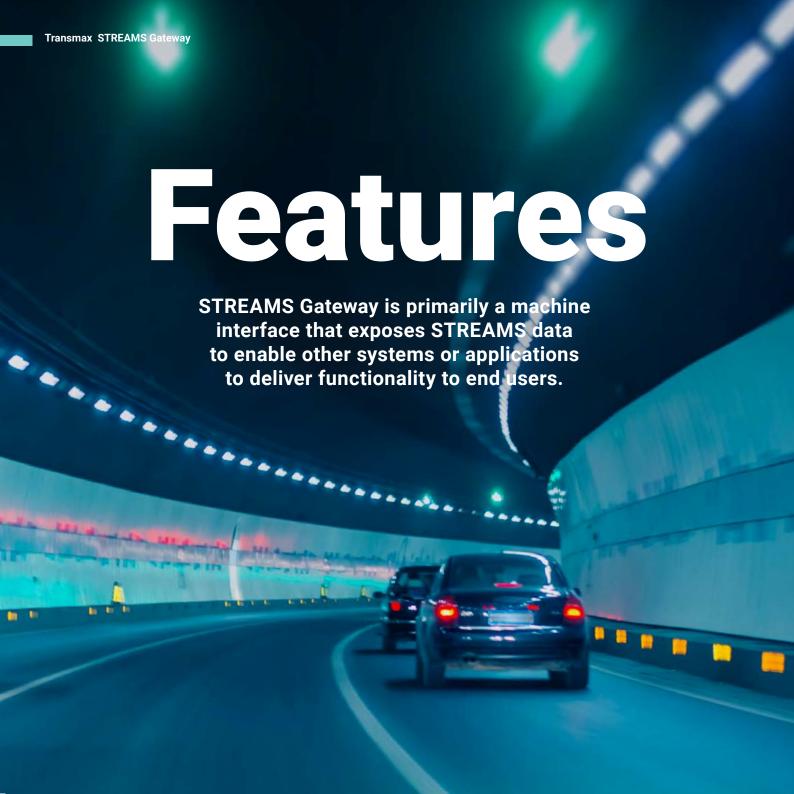


STREAMS Gateway is a data solution for traffic and transport enabling customers to easily access data feeds collected by Transmax's ITS platform STREAMS. It is primarily a machine interface that enables other systems or applications to deliver functionality to end users. These systems and applications can be developed by data consumers, Transmax or third parties.

STREAMS Gateway is the only way to programmatically access STREAMS data. It offers customers the unique opportunity to access valuable data the way they want it.

- Customers can use this data to:
- gain high-level insights into the traffic network such as road use, traffic congestion and travel times
- analyse the impact of incidents
- have accurate information to inform decision making
- facilitate real-time incident response
- and integrate the data with other applications to improve network performance and provide enhanced services to customers.

Transmax offers customers a suite of product options for STREAMS Gateway and customers can choose an option that best suits their needs.





As a solution that improves the accessibility of STREAMS data, STREAMS Gateway facilitates:

INNOVATION BY EVERYONE

The availability of industry standard interfaces makes it easy for stakeholders to connect using their tool of choice and start innovating.

RAPID DELIVERY OF NEW CAPABILITIES

The ability to manipulate data outside the core control system facilitates the rapid development of new application capabilities.

INTEROPERABILITY BETWEEN SYSTEMS

A growing suite of data services and data delivery mechanisms helps third-party systems use data from STREAMS to improve user workflows.

ROBUST AND SUSTAINABLE SOLUTIONS

Semantically versioned interfaces, live data documentation and decoupling from the core control system make integrations that use STREAMS Gateway robust and sustainable.

> ALIGNMENT WITH OPEN DATA POLICIES

STREAMS Gateway makes it easy for road authorities of all sizes to make their data available to the public.

Transmax offers customers a suite of product options for STREAMS Gateway and customers can choose an option that best suits their needs.

STREAMS® Gateway Access

STREAMS Gateway Access enables road authorities to programmatically access data from their STREAMS systems via a suite of reliable, easy to consume APIs.

Customers are provided with access to the full range of endpoint types and delivery mechanisms with some restrictions on the number of log endpoints or event feeds available. Customers can use data from STREAMS Gateway Access to power a light live application or to populate a data lake with aggregations.

STREAMS® Gateway Extract

STREAMS Gateway Extract enables customers to build their own data lake by simplifying the process to extract accurate logs without having to reconstruct them from frequent polling of live data.

Customers using STREAMS Gateway Extract to populate a data lake benefit from the ability to use the data to:

- optimise an arterial network through the use of historical traffic and intersection configuration data
- perform whole network optimisation through the use of artificial intelligence
- fine-tune algorithm parameters of a new Smart Motorways algorithm and analyse its long-term effects.



STREAMS® Gateway Live

STREAMS Gateway Live enables customers to access live data to power customer/external applications that can display or respond to STREAMS data in real time.

STREAMS Gateway Live can power customer applications by providing access to live STREAMS data through lowlatency REST APIs, and event-driven interfaces.

Customers can use external applications that display or respond to STREAMS data in real-time, enabling them to:

- fuse STREAMS data with data from other sources facilitate real-time incident response
- periodically synchronise the GIS model of an external application with STREAMS transport network
- create situational awareness dashboards with live traffic measure and device status information
- inform road users of current road status and safety information on in-vehicle displays.

STREAMS Gateway Live facilitates the provision of accurate information to inform decision making and facilitate real-time incident response. It becomes a tool for customers to:

- improve customer journeys
- provide enhanced services to customers
- · improve network performance.

Real-time usage scenarios



STREAMS Gateway supports an ecosystem of systems and applications that require real-time data from STREAMS.



AUTOMATE



INGEST



INCLUDE

DELIVER



FUSE

Customers, Transmax or third parties can use STREAMS Gateway's real-time capabilities to:

Automate asset management workflows

STREAMS* Gateway Live

Existing asset management systems can receive alerts from STREAMS Gateway when the status of a device changes or a new fault is detected. The availability of this information makes it easy to automate workflows like the creation of a new maintenance job.

Ingest STREAMS data into a corporate data platform

STREAMS" Gateway Extract

Large road authorities typically have their own corporate data platform which is maintained by a dedicated team. These teams can use the real-time capability of STREAMS Gateway to ingest raw data into their platform.

Include STREAMS data in a custom web dashboard

STREAMS Gateway Live

+ STREAMS Gateway Access

The STREAMS Gateway REST API can be called directly from custom dashboards to easily display STREAMS data.

Deliver information to the public via an application or website

STREAMS
Gateway Live + Gateway Access

STREAMS Gateway provides a modern interface that can be used either to retrieve data for republication or as a backend for publicly available applications.

Fuse or manipulate data for reuse in STREAMS

STREAMS'
Gateway Access

After consuming the raw data, algorithms can be used to create a new data source and this data can then be displayed within STREAMS Explorer using map layer extensibility.

Real world application

of STREAMS Gateway

Throughout the 2018 Commonwealth Games on the Gold Coast in Queensland, STREAMS Gateway was successfully used to enable situational awareness by providing real-time data to monitor, detect and report on the operation of the Gold Coast road network.

Network operators were ingesting real-time STREAMS Gateway data into an off-the-shelf GIS package, together with data from a variety of other data sources. This information was used to update variable message signs, control STREAMS traffic lights, inform media and help coordinate public transport.

LANE OCCUPANCY HEAT MAP

An example of what STREAMS Gateway can enable









STREAMS Gateway data services are split into two categories: basic and value added.

BASICData Services

STREAMS Gateway's basic data services represent the logical grouping of the raw data from a STREAMS system and includes:

- **Device Data Service**
- Incident Data Service
- Algorithms Data Service
- GIS Data Service
- Traffic Data Service

VALUE ADDED Data Services

Value added data services use algorithms to derive information and/ or combine data from multiple sources to deliver an outcome. This service is available on request and priced by negotiation.

Examples of potential value added data services include:

- Cleansed traffic data
- Fused traffic data
- Spatial query service
- Traffic KPIs

Contact

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