



SCATS Evolution

Sydney Coordinated Adaptive Traffic System (SCATS)

World-leading innovation in Intelligent Transportation Systems (ITS) solutions for over 48 years.

As a government-owned, made and operated in New South Wales, Australia, SCATS has been instrumental in helping cities optimise their traffic networks and ensure the safety of their people.

SCATS has continued to evolve to meet the changing needs of customers and cities alike. The platform's adaptability and innovation has played a significant role in addressing global challenges.

Our cutting-edge solutions enable cities to effectively monitor, control, and optimise traffic flow. With a strong commitment to fostering smart city initiatives, SCATS actively contributes to the transformation of cities into more efficient and interconnected urban spaces. It's not just about managing traffic, it's about creating and maintaining a connected, safe, and environmentally sustainable city.

Our focus

We understand that the challenges you encounter in managing urban environments are evolving and multifaceted.

At SCATS, we are committed to innovating and adapting to assist you in achieving your objectives. Our mission is to offer solutions that align with your public policy goals, demonstrating tangible value to your city, while also maximising efficiency and doing more with fewer resources.

The future holds exciting opportunities for transformative changes in urban mobility. We are thrilled to have you join us on this journey.

Together we strive to create cities that are not only efficient and well-connected but also prioritise safety, sustainability, and the well-being of all its people. By working hand in hand, we can tackle the challenges of today and build a brighter, more sustainable future for our cities.

Our Vision

Move smarter with SCATS



Resilient and scalable

Modular

Easy to install, learn, use

Open and secure

User-centred design

Rapid innovation

SCATS is a platform that is

Outcomes focused

Supporting sustainable, liveable and safe cities

Policy responsive

Optimise and prioritise road user movement

Predictive and adaptable

Responsive to network and environmental conditions

Connected and integrated

Geographically integrated and flexible

Technology focused

Leverages new and emerging technology including CAVs

Data driven

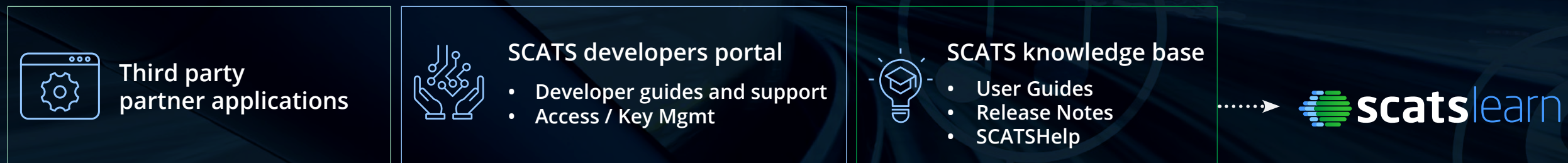
Data rich and insights driven decisions

Great transport helps cities thrive.

Great transport requires a modern traffic management platform.

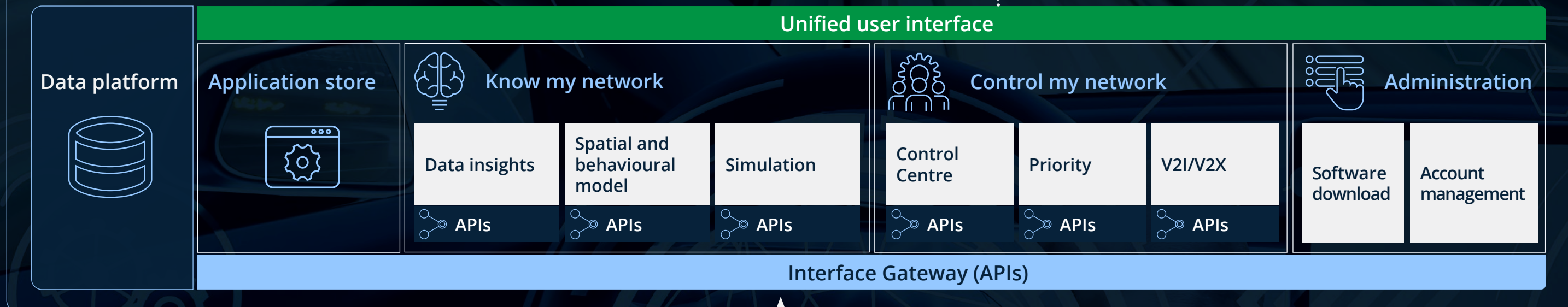
SCATS future state

SCATS ecosystem

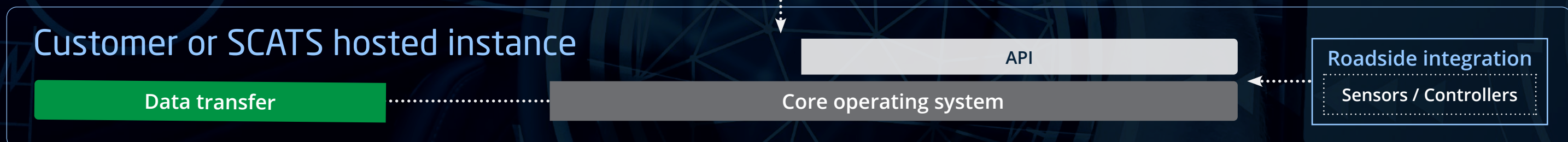


SCATS platform

The gateway to managing your SCATS network



Customer or SCATS hosted instance



New products (in development)

The new SCATS Platform User Interface

The new SCATS user interface (UI) is a suite of traffic management products to manage and optimise your city's transport network. It will provide access to all SCATS capabilities, giving you a seamless and intuitive experience.

The first SCATS capabilities available through the new UI will be Control Centre and Data Insights. These capabilities have a focus on usability from the ground up, including:

- Web based user experience
- A consolidated UI
- Easy and intuitive navigation
- Accessible (AA standard)
- Responsive for desktop, tablet, and mobile
Note: Data will not be responsive at first release
- Single Sign On (SSO) authentication
- Role based access control
- Cater for different roles / users

Control Centre

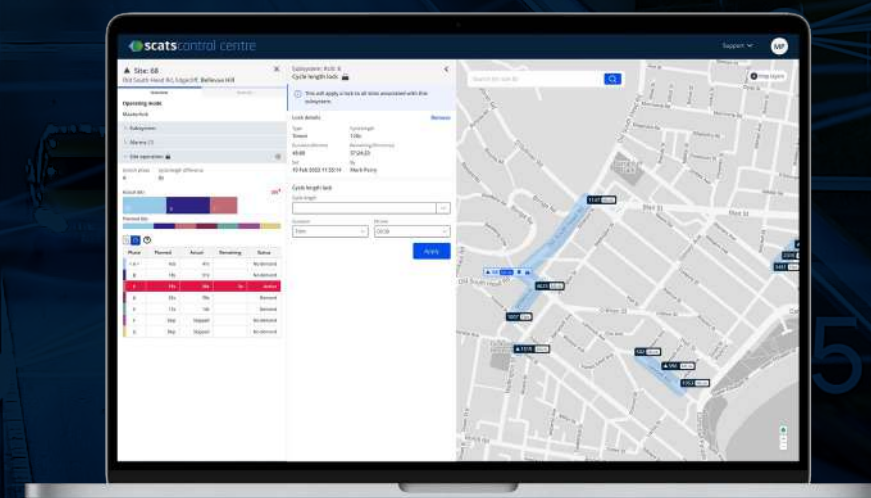
Control Centre provides situational awareness, giving you visibility to incidents, abnormal network conditions, and system effectiveness through easy-to-understand map visuals.

Key capabilities:

- **Your network, visualised:** the map provides an intuitive display of your network's sites and their coordinated interactions, allowing you to grasp the overall picture effortlessly.
- **Customisable display:** configure the map to show different states, such as alarms, operating modes, and locks, allowing you to monitor critical aspects of your network.
- **Comparative analysis:** easily compare information between multiple sites, helping you make well-informed decisions, especially when reporting incidents.

Benefits:

- ✓ **Enhanced user experience:** the intuitive and modern user interface ensures a positive user experience, contributing to improved user retention.
- ✓ **Real-time situational awareness:** the Map based UI gives you an overview of the network, enabling you to respond swiftly and effectively to changing conditions.
- ✓ **User-centred design:** the interface was developed your needs in mind, making it easier to navigate the network and facilitating better decision-making.
- ✓ **Improved efficiency:** by streamlining workflows and offering easy-to-access information, Control Centre allows you to work smarter and more efficiently.
- ✓ **Streamlined onboarding and training:** the user-friendly interface reduces the time needed for user onboarding and training.
- ✓ **Simplified navigation:** by centralising features, Control Centre reduces complexity, enabling you to focus on what matters most - managing your transport network effectively.



Data Insights

Data Insights will give you a deep understanding of the road network by identifying trends, patterns, and correlations allowing you to make strategic data-driven decisions.

The insights will be presented in the new SCATS UI through powerful visualisations that are easy to view, understand, and analyse.

Harnessing SCATS data will remove the guesswork, allowing you to measure the effectiveness of your optimisations and drive mobility outcomes.

Key capabilities:

- **Congestion:** access near real-time, historic, and unusual/non-recurring congestion. Network and site view of congestion index and severity, length of time, relative speed and free flow. Customisable views of congestion by detectors and movements, enables you to make informed decisions on how to optimise the network.
- **Site investigation:** a single comprehensive view of critical data points to aid in the investigation of incidents. Together with historical data, it will allow you to identify patterns and trends over time. It includes metrics for faulty detector, alarms, network communication, traffic signal operations.
- **Site performance:** understand whether sites are performing optimally through the visualisation of traffic flow, throughout, capacity, degree of saturation, and volume to occupancy ratio.

- **Vehicle performance:** understand how vehicles are performing through the visualisation of travel time, relative speed, and stoppage time.

Benefits:

- ✓ **Turn-key insights:** fast access to actionable insights to make data-informed decisions
- ✓ **Unified interface:** effortlessly streamlining decision-making processes in a single intuitive interface
- ✓ **User-centred design:** dashboards providing accessible and digestible data with comprehensive filters to order, sort and export data to serve your purpose
- ✓ **Eliminating skewed results:** don't let bad or missing data lead to inaccuracy through volume detector estimation.

By leveraging these powerful capabilities and benefits, SCATS Data Insights empowers you to optimise traffic management, enhance road network efficiency, and deliver a more seamless and effective experience for all road users.

Cit-e

Cit-e, a cutting-edge software solution revolutionising Vehicle to Everything (V2X) connections, with the introduction to Vehicle to Infrastructure (V2I) communication for Connected and Automated Vehicles (CAVs).

SCATS is currently conducting trials to assess the effectiveness of V2I capabilities in facilitating Red Light Violation Warning (RLVW) and Turn Warnings for Vulnerable Road users (TWVR).

Cit-e's primary focus lies in leveraging V2I use cases to enhance road user safety and optimise network efficiency. However, our long-term vision extends beyond this initial scope. Expanding our capabilities to encompass other V2X connections.

Cit-e also serves as a platform for gathering and analysing data from CAVs. By tapping into this wealth of information, SCATS aims to gain valuable insights into CAV behaviour, enabling us to develop new and advanced AI algorithms.

Ultimately, our goal is to foster positive changes in road user behaviour, boost vehicle productivity, and offer unparalleled network insights. Cit-e aims to optimise network performance, paving the way towards a safer and more efficient future for our roads.

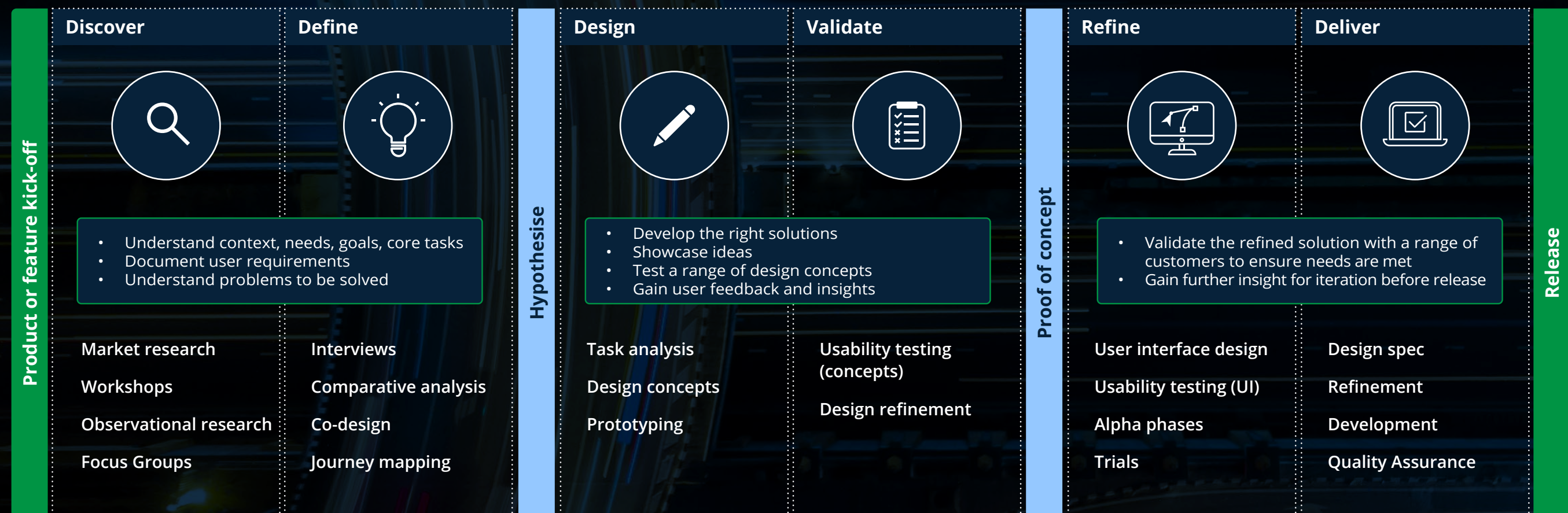
Benefits:

- ✓ **Safety:** By focusing on the two crucial use cases, we have the potential to reduce fatal and serious injury accidents at signalised intersections providing significant social and economic benefits.
- ✓ **Productivity:** through improved travel times and vehicle efficiency, V2I has the potential to alleviate traffic congestion, ultimately reducing transportation costs and increasing overall productivity.
- ✓ **Sustainability:** By optimizing fuel efficiency and consumption, V2I plays a role in lowering emissions, contributing to more environmentally friendly and sustainable transportation practices.
- ✓ **Liveability and equality:** the implementation of V2I technology enhances the well-being of citizens by making communities more liveable and active transport, such as walking and cycling safer. Additionally, CAV support further contributes to this objective by enhancing the accessibility and performance of public transport.

These benefits align with the vision of transport authorities and governments worldwide, paving the way towards a safer, more sustainable, and inclusive transportation landscape.

Customers at the centre of everything we do

Our customers are part of our design and development process



Note: This is a summary of the process and is depicted in a linear format for ease of presentation, however activities across phases occurring in parallel with the overall process being circular with many more activities.

SCATS customer research

As we continue to enhance the SCATS platform, we recognise the importance of evolving our customer research and user-centred design processes. To achieve this, we are actively conducting ongoing user research to engage with end users and gain a comprehensive understanding of their needs and how they utilise SCATS. We also seek their valuable feedback on early design concepts for potential features.

To ensure the effectiveness and thoughtfulness of our customer research, we are taking steps to expand our product research group to include global SCATS users. Users from around the world are invited to participate in short research sessions on a semi-regular basis. By involving a broad set of users, we aim to gather broad perspectives and insights that will help us shape the future direction of SCATS features.

We are eager to include members of your team in this research initiative. Your team's participation will add immense value to the process and contribute to creating a more user-centric and innovative SCATS platform. Your input and collaboration are highly valued as we strive to make SCATS even more beneficial and relevant to its users. Together, we can shape the future of SCATS and ensure it remains a cutting-edge and indispensable tool for users across the globe.

Getting involved

What does this involve?



Surveys



Usability testing (concepts)



Interviews



Focus groups



Market research



Workshops



Alpha and Beta Trials

Benefits:

Getting involved in user-research ensures that:

- ✓ The future of SCATS is user-friendly, and designed in-line with your needs
- ✓ You directly influence the SCATS product roadmap, including the features developed
- ✓ Your teams (end users) are more engaged because features are more relevant to their day-to day needs
- ✓ You get to innovate collaborate with us
- ✓ You get a first-hand look at the products and features we are developing before they are launched

How often will staff be invited to participate?

Frequency of engagement is to be agreed with staff, and their managers.

Users can opt-out at any time.

Get involved

We are currently seeking end users to opt-into for research and validation related to the Control Centre and Congestion visualisation.

To get involved send an expression of interest to scats_strategic_product@transport.nsw.gov.au



www.scats.nsw.gov.au

For more information, contact scatshelp@transport.nsw.gov.au

