



ARUP

Gate of the Future

Integrating advanced ticketing and security screening technology with crowd modelling to deliver great user experiences at the Melbourne Cricket Ground.

May 2023



30th ASIA-PACIFIC
VENUE INDUSTRY
CONGRESS



Acknowledgement of Country

We acknowledge the Traditional Custodians of the land on which we are located, the Wurundjeri People of the Kulin Nation. We pay respects to Elders past, present and emerging.

We acknowledge and respect their continuing culture and the contribution they make to the life of this city and beyond.

Panel members



ARUP



Lauren Castles

**Executive Manager,
Member and Guest Experiences
Melbourne Cricket Club**



Mark Oxnam

**Executive Manager,
Security and Precinct
Melbourne Cricket Club**



Manuel Lawrence

**Senior Consultant
People Movement and Experience
Arup**

MCG Overview



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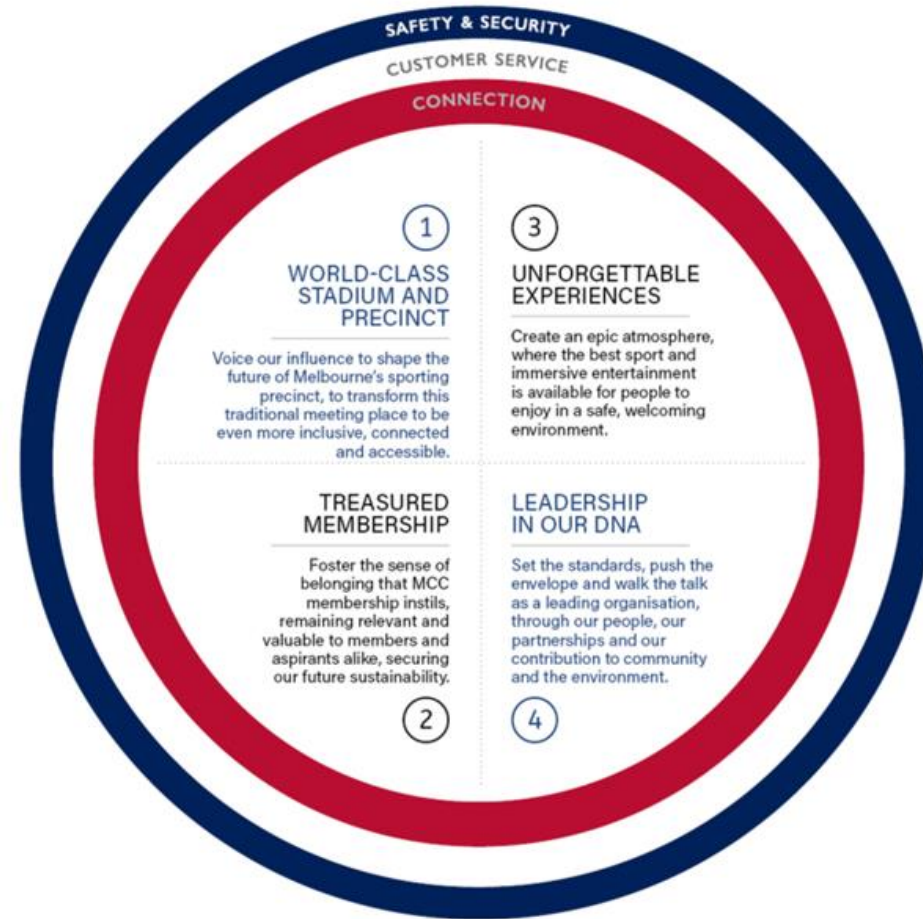




MCC Overview

Our purpose is to move Australia through the transformative power of live sport, entertainment and culture.

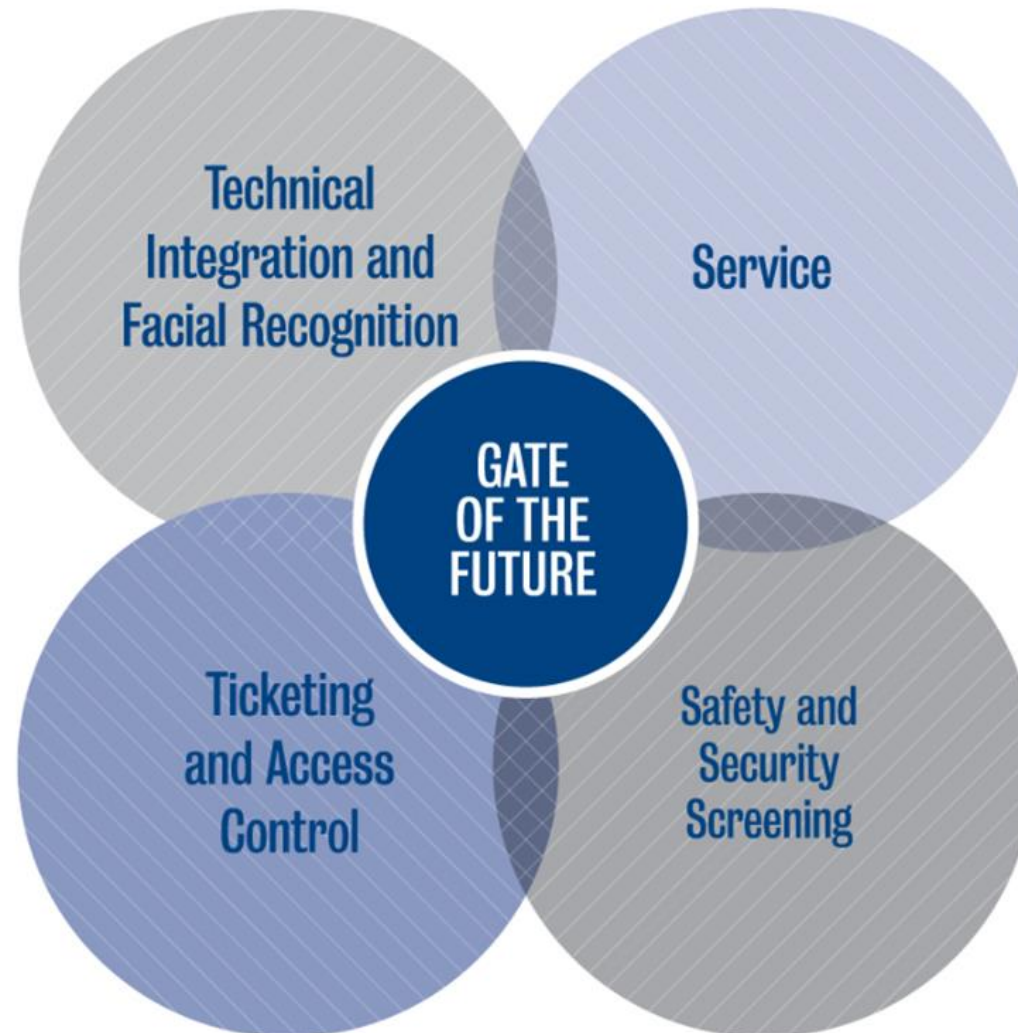
We foster the love of sport by creating unrivalled experiences that inspire and cultivate a sense of connection and belonging.



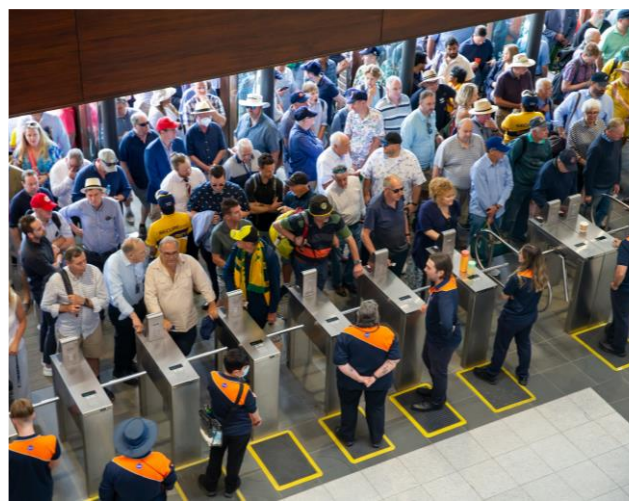
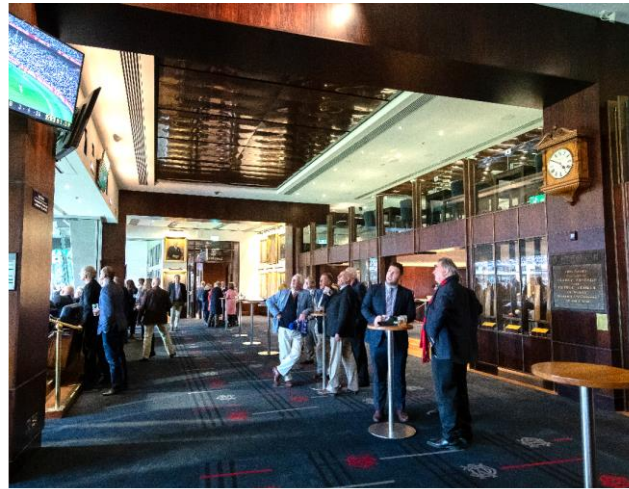
LEVERS: PARTNERSHIPS + TECHNOLOGY + STORYTELLING + PEOPLE



Gate of the Future Project Plan

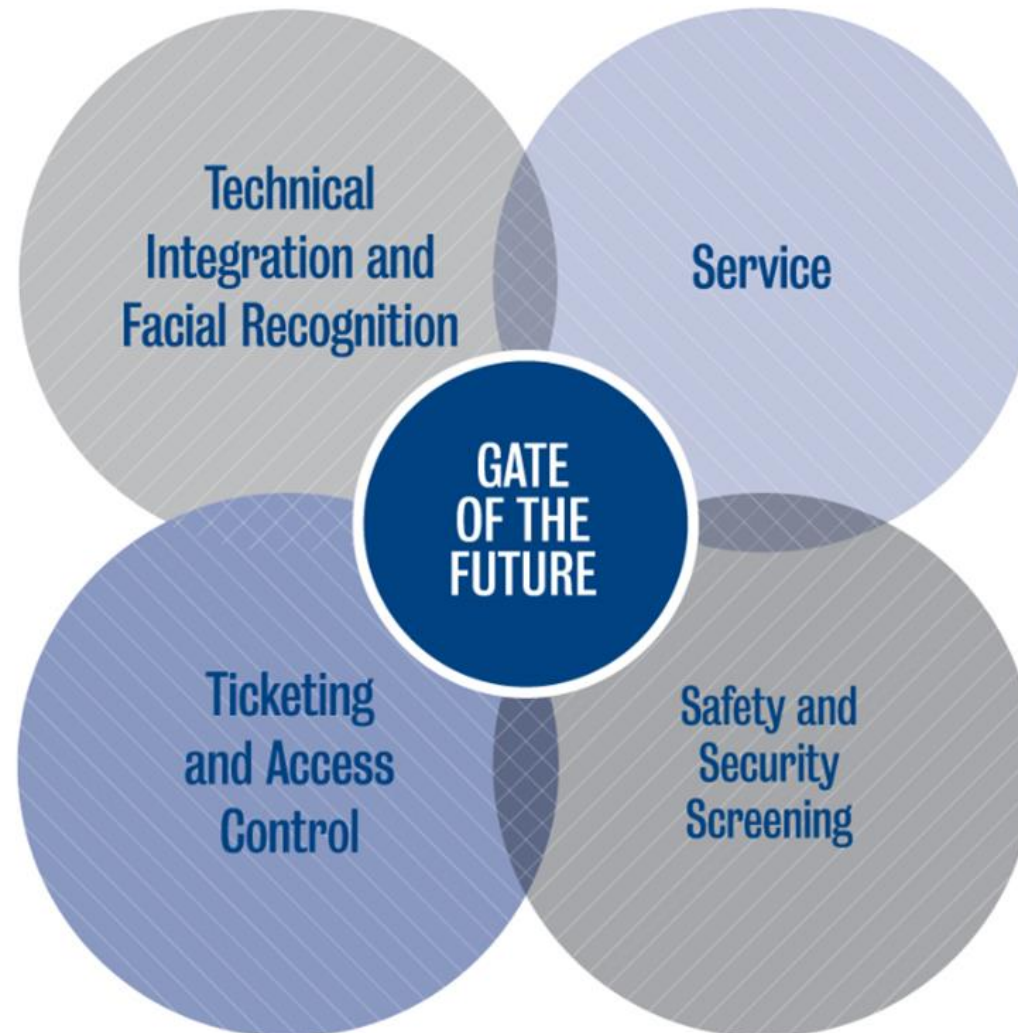


Customer flow and experience challenge





Gate of the Future Project Plan





Security and emerging technology

More likely weapons



Basic weapons

Basic weapons are defined as readily available, everyday objects that do not require specific skills or training to use as weapons. These weapons include knives and vehicles.



Explosives

Australia-based violent extremists may consider the use of homemade, commercial or military explosives.



Firearms

Australia-based violent extremists may consider acquiring firearms via legitimate and/or illicit acquisition methods.

More likely tactics



Armed attackers



Person-borne improvised explosive device



Emplaced improvised explosive device



Beheading



Vehicle-borne improvised explosive device



Hostage taking in siege situations



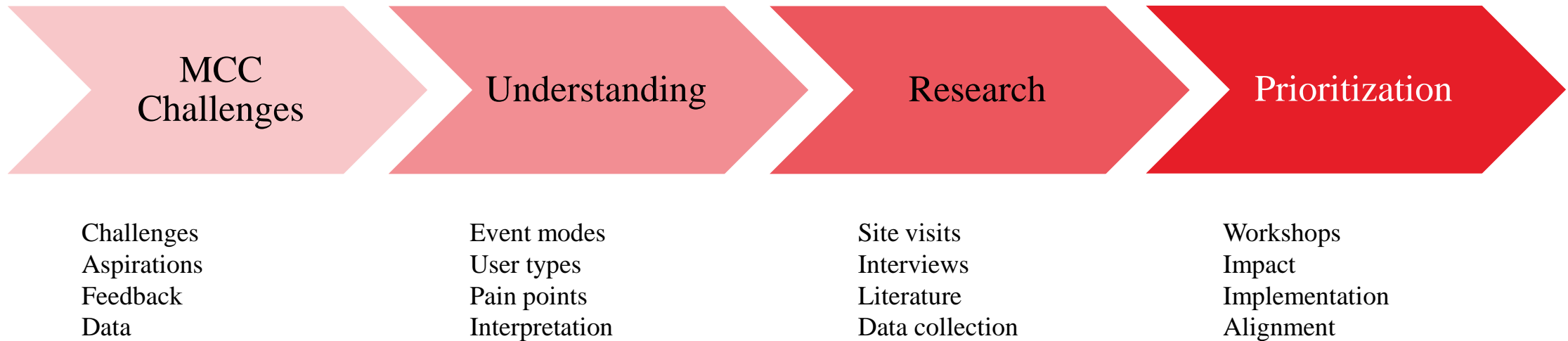
Hostile vehicle



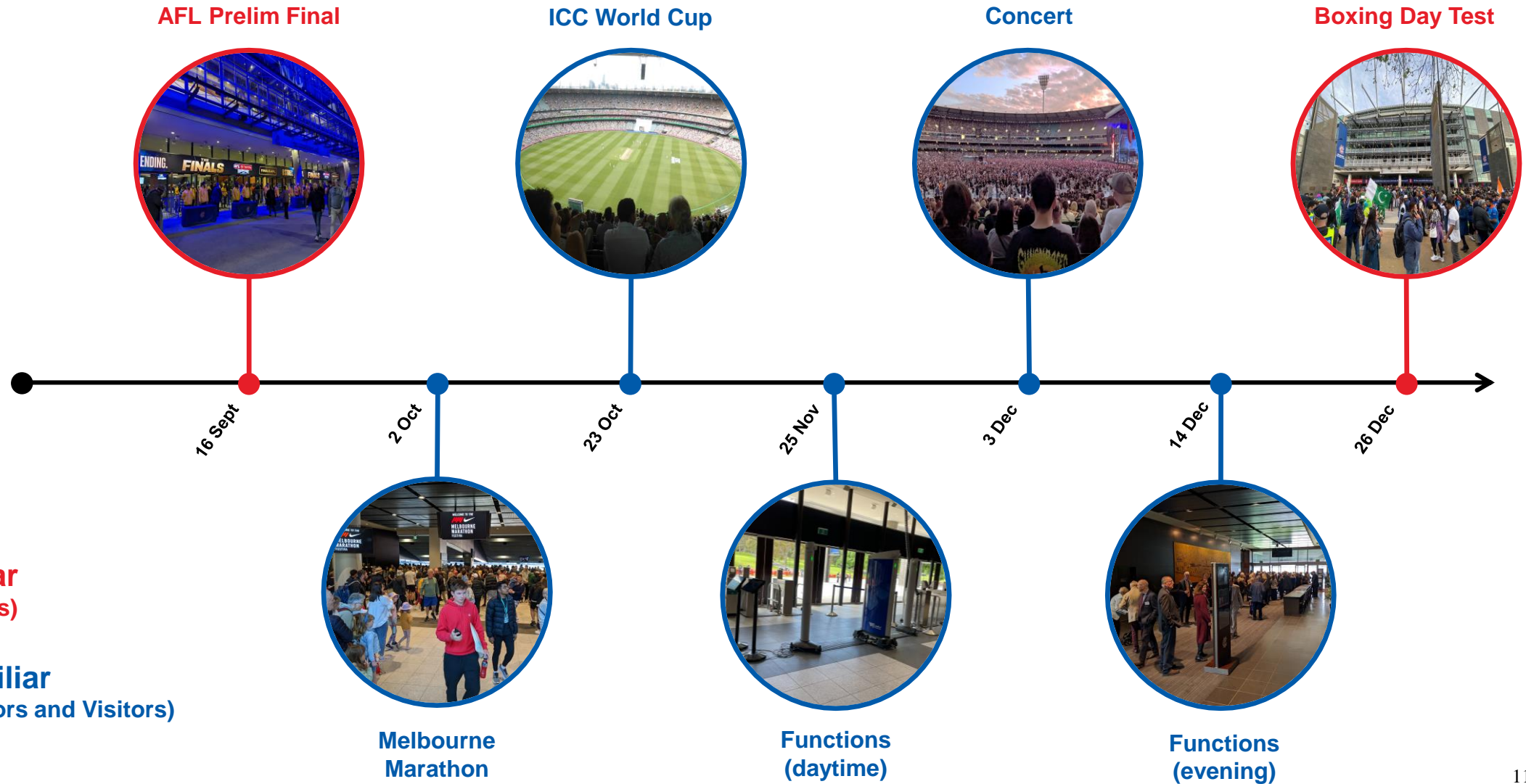
Reconnaissance and rehearsals

MCG Gate 2 Case Study

Approach



Site Visits

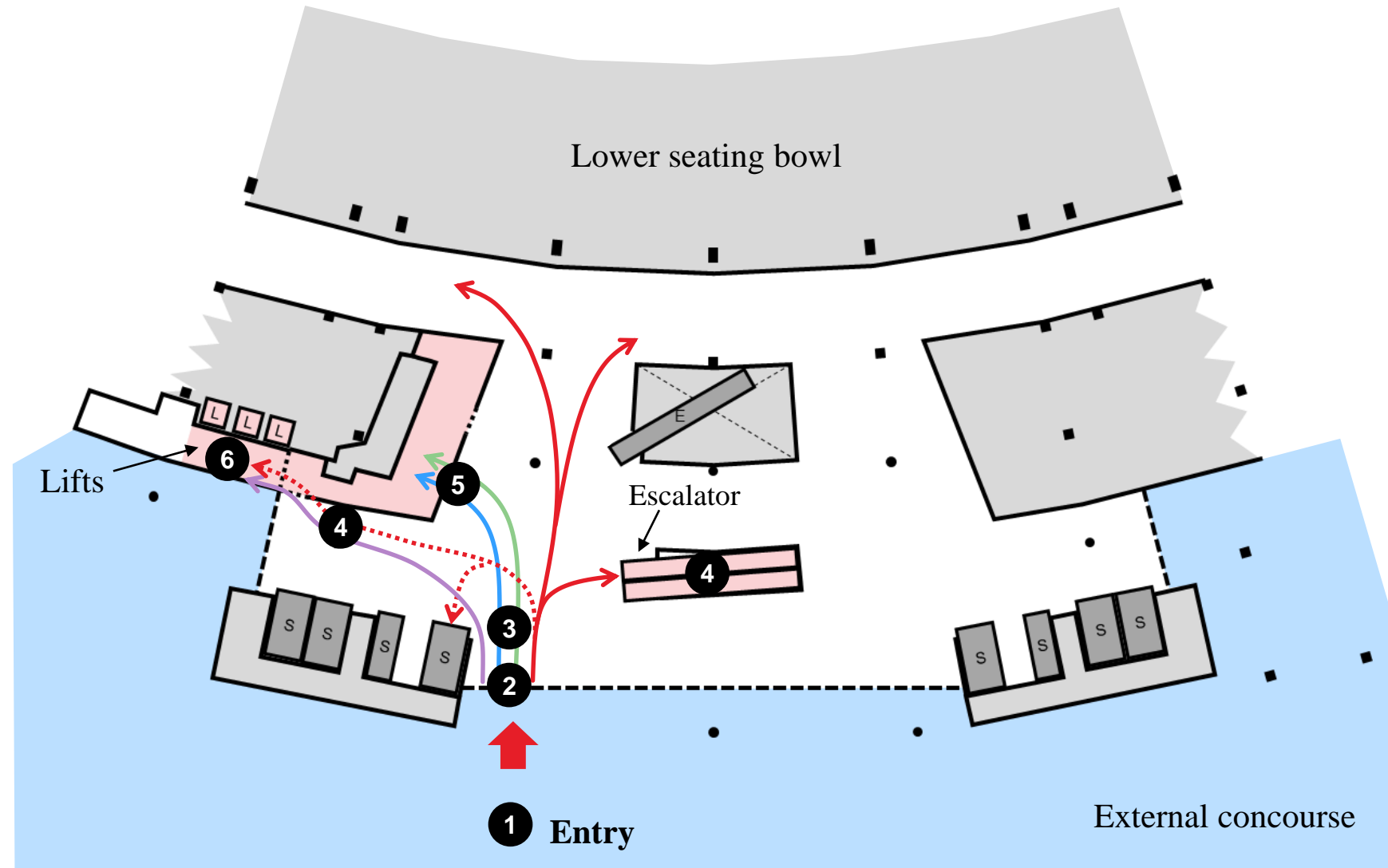


User Journey

Non-Event Day

Key components of the arrival experience for visitors and guests on non-event days:

1. Seek entrance
2. First contact
3. 'First move' inside
4. Make transition
5. Seek concierge
6. Arrive from carpark

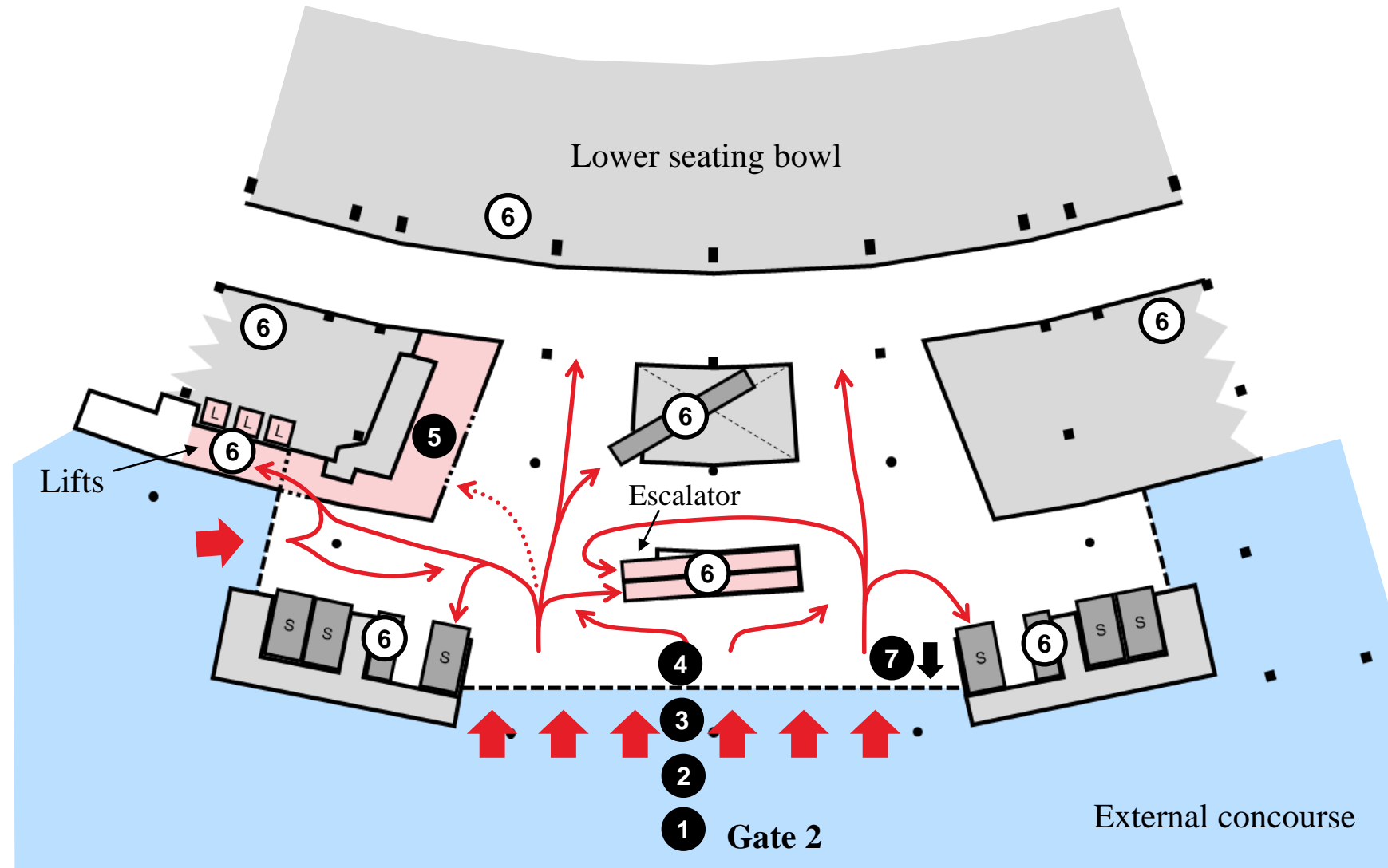


User Journey

Event Day

Key components of the arrival experience for spectators and guests on event days:

1. Seek entrance gate
2. Queue
3. Security screening
4. Ticket scan
5. Seek concierge
6. Seek (multiple)
7. Pass-outs



Opportunities

Enhance user experience and operations



Improve Wayfinding

- Improve signage to guide guests to existing entrance.
- Introduce dynamic wayfinding inside the venue to guide guests to function spaces, through transitions and between services.



Gate 2 Arrival Experience

- Curate the arrival experience for guests.
- Enhance the role of the Gate 2 entrance staff to prioritize customer service (the first impression).



New 'Front Door'

- Create a new 'front door' for non-event day movements to improve arrival user experience and align with current and future multi-use aspirations.



Escalator Configuration

- Consider reconfiguration of the escalators to improve circulation, create stronger visual cues for navigation and open sightlines to the field of play and.



Security Arrangement

- Continue review of emerging security screening technologies with a view to improve patron experience and the quality of security screening.

Security

Technologies – Opportunities and Challenges

Walk Through Metal Detector

Detects Metallic Objects

Opportunities

High throughput ~3600 ppl/h
Adjustable sensitivity
Limited central monitoring

Challenges

High false alarm rate
Manual bag search
Single file throughput



Smart Walk-Through Metal Detector

Detects and Categorizes Metallic Objects

Opportunities

High throughput ~4000 ppl/h
Adjustable detection criteria
Bespoke central monitoring
No divesting required

Challenges

Increased false alarm with bag quantity
New to Aus market



Millimetre Wave

Detects Metallic and Organic Objects

Opportunities

Broad detection criteria
Low false alarm rate

Challenges

Low throughput
No internal concealment detection
Large equipment footprint



TeraHertz Screening

Detects Metallic and Organic Objects

Opportunities

Broad detection criteria
Mobile deployment
Medium throughput ~2000 ppl/h

Challenges

Ideal for indoor operation
Limited by patron clothing
New to global market
Manual bag search



X-Ray Scanners

Detects Metallic and Organic Objects

Opportunities

Broad detection criteria
Detects internal concealment

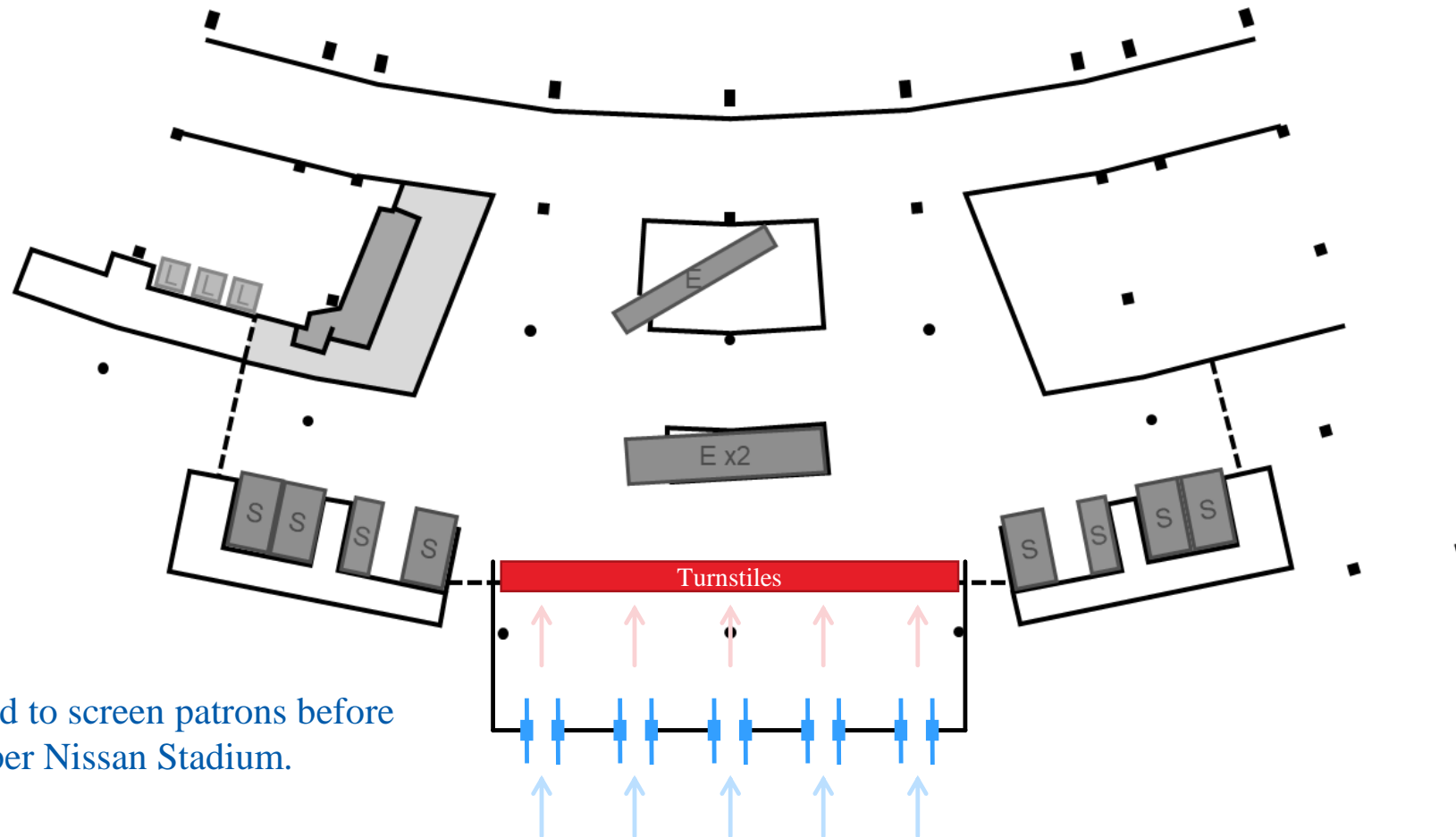
Challenges

Very low throughput
Large equipment footprint
Limited sensitivity



Security

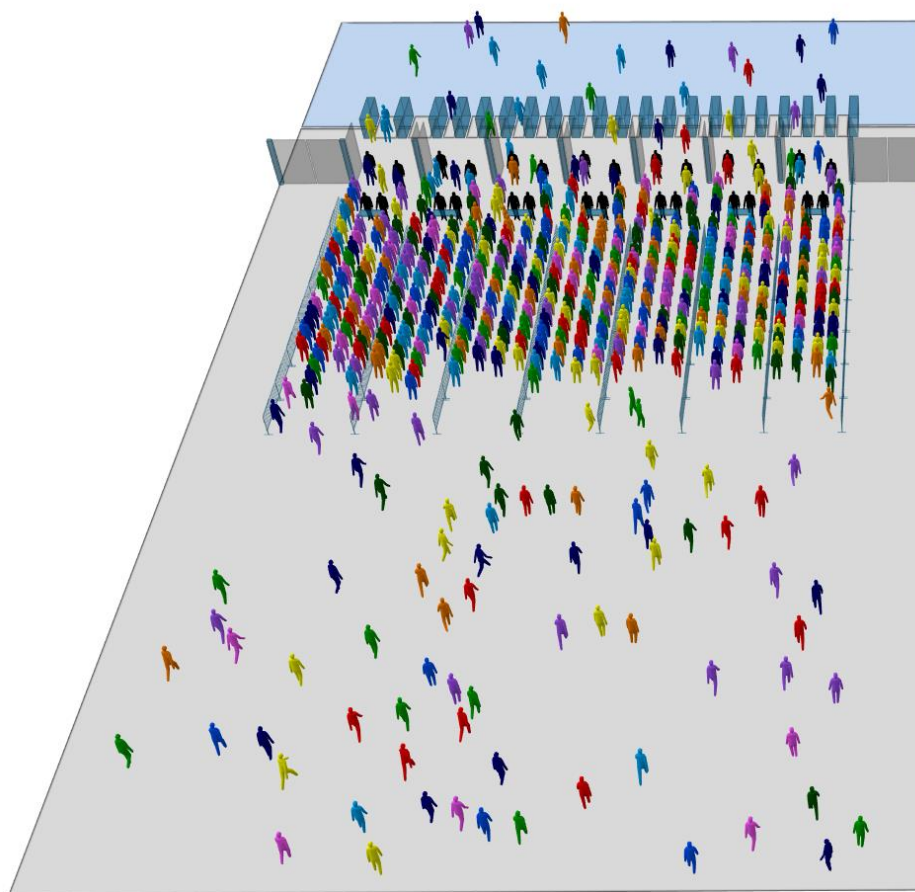
Example Evolv Express Configuration



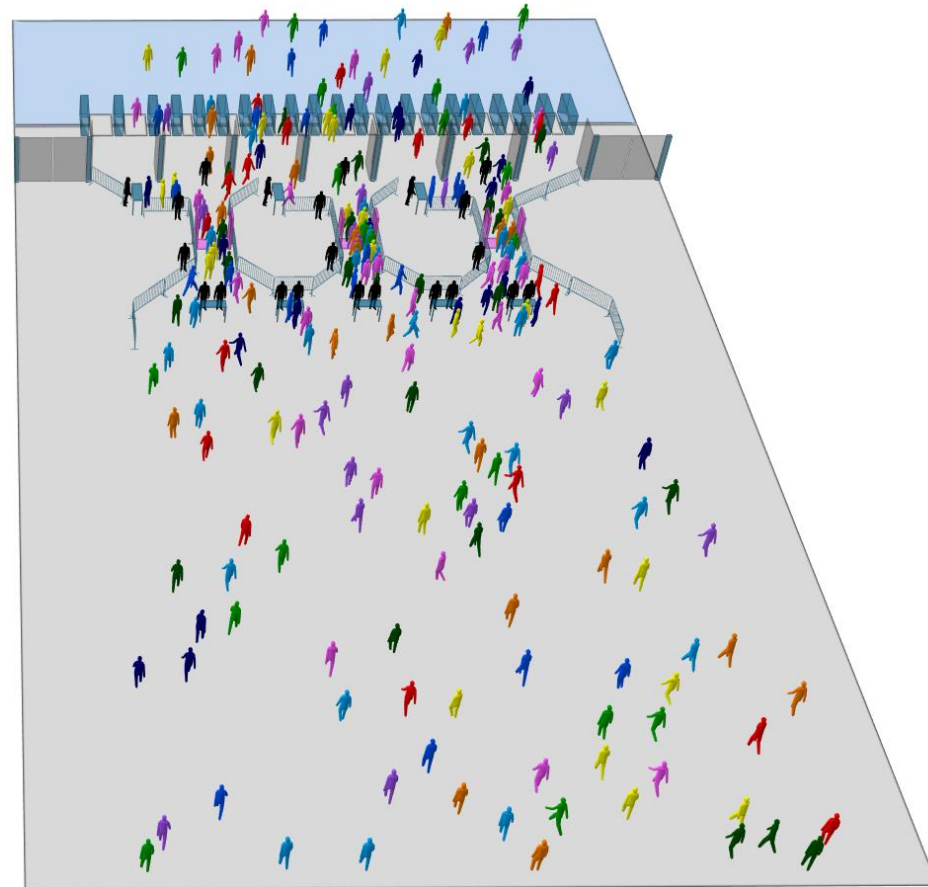
Evolv arranged to screen patrons before turnstiles, as per Nissan Stadium.

Security

Example pedestrian model – traditional vs advanced



Traditional

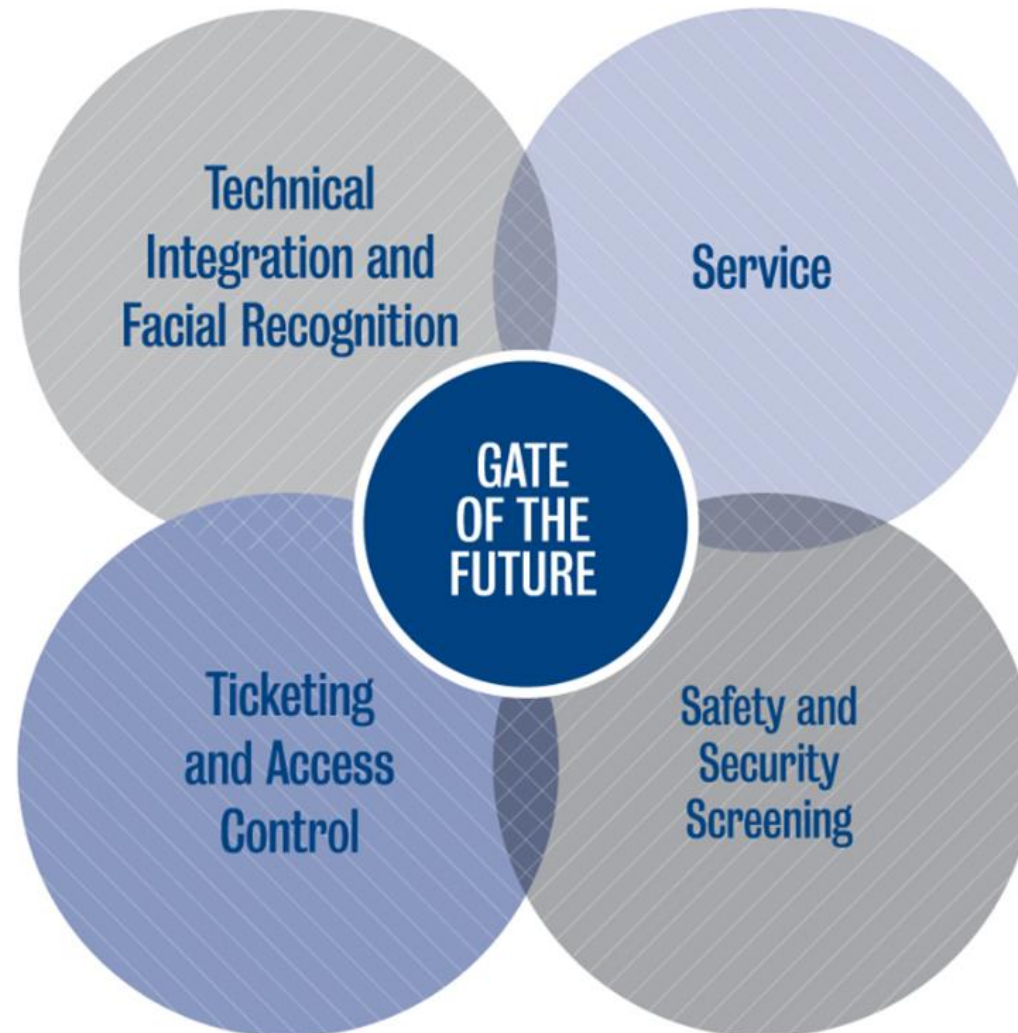


Advanced Technology

Conclusions



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Q&A session





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Please come and visit us at

Arup Stand #4

in the Morning Tea break

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