WORLDWIDE AIRPORTS LAWYERS ASSOCIATION

XI Welcome to WALA XI
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Artificial Intelligence in Airports

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SITA
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What is A.I.?

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Human intelligent behavior and processes simulated by machines, specially computer systems.

A.I. systems typically demonstrates behaviors associated with human intelligence – planning, learning, reasoning, problem-solving, knowledge representation, perception motion, manipulation and... to a lesser extent, social intelligence and creativity.

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Machine Learning, Deep Learning

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Machine Learning – subset of A.I. Uses computer algorithms to analyze Data and make intelligent decisions based on what it has learned, without being explicit programmed. ML algorithms trained with large sets of Data.

Deep Learning – specialized subset of ML. Uses layered neural networks to simulate human decision-making. DL algorithms can label and categorize Data and identify patterns, continuously learning on the job.

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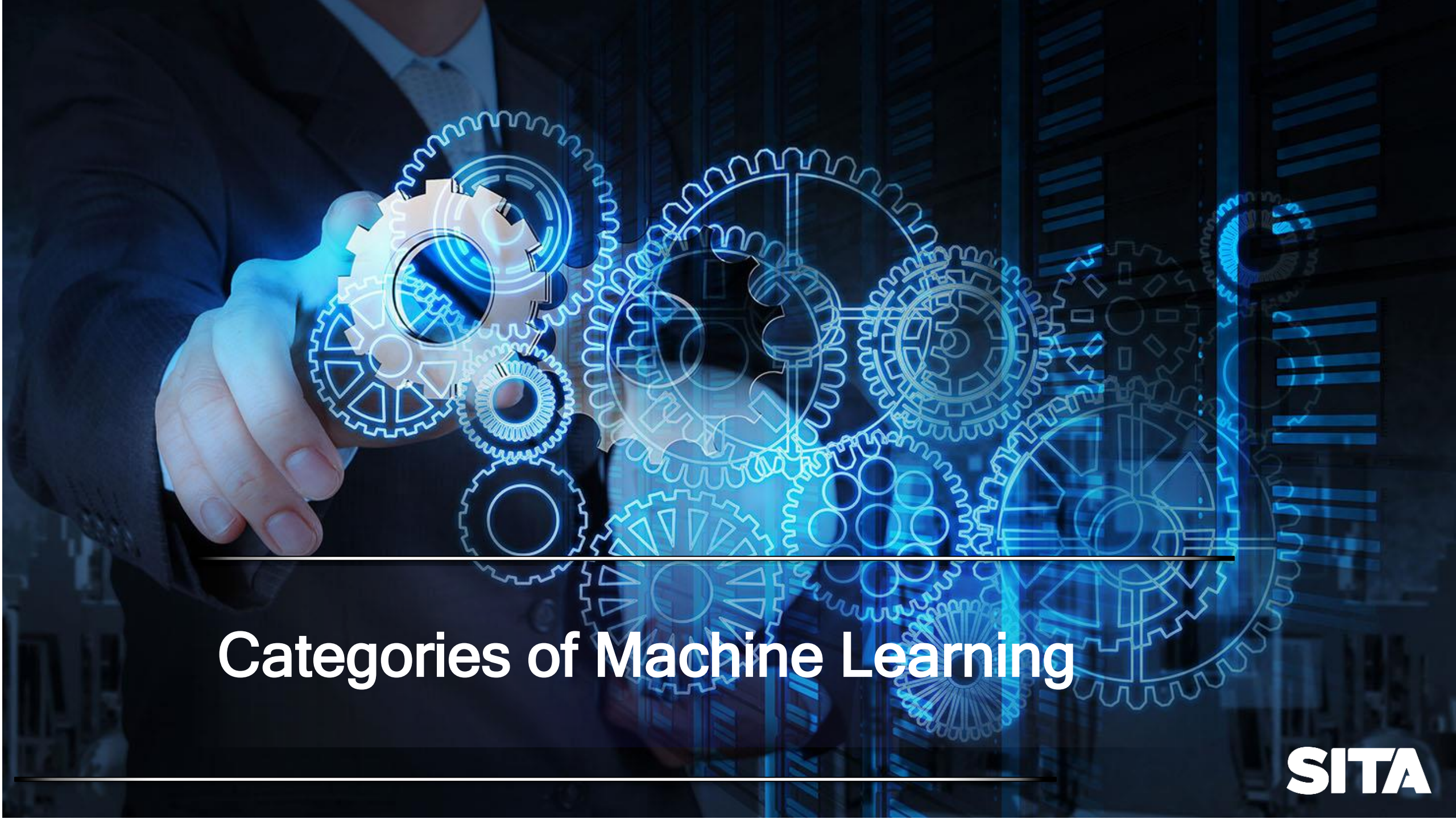

Categories of Machine Learning

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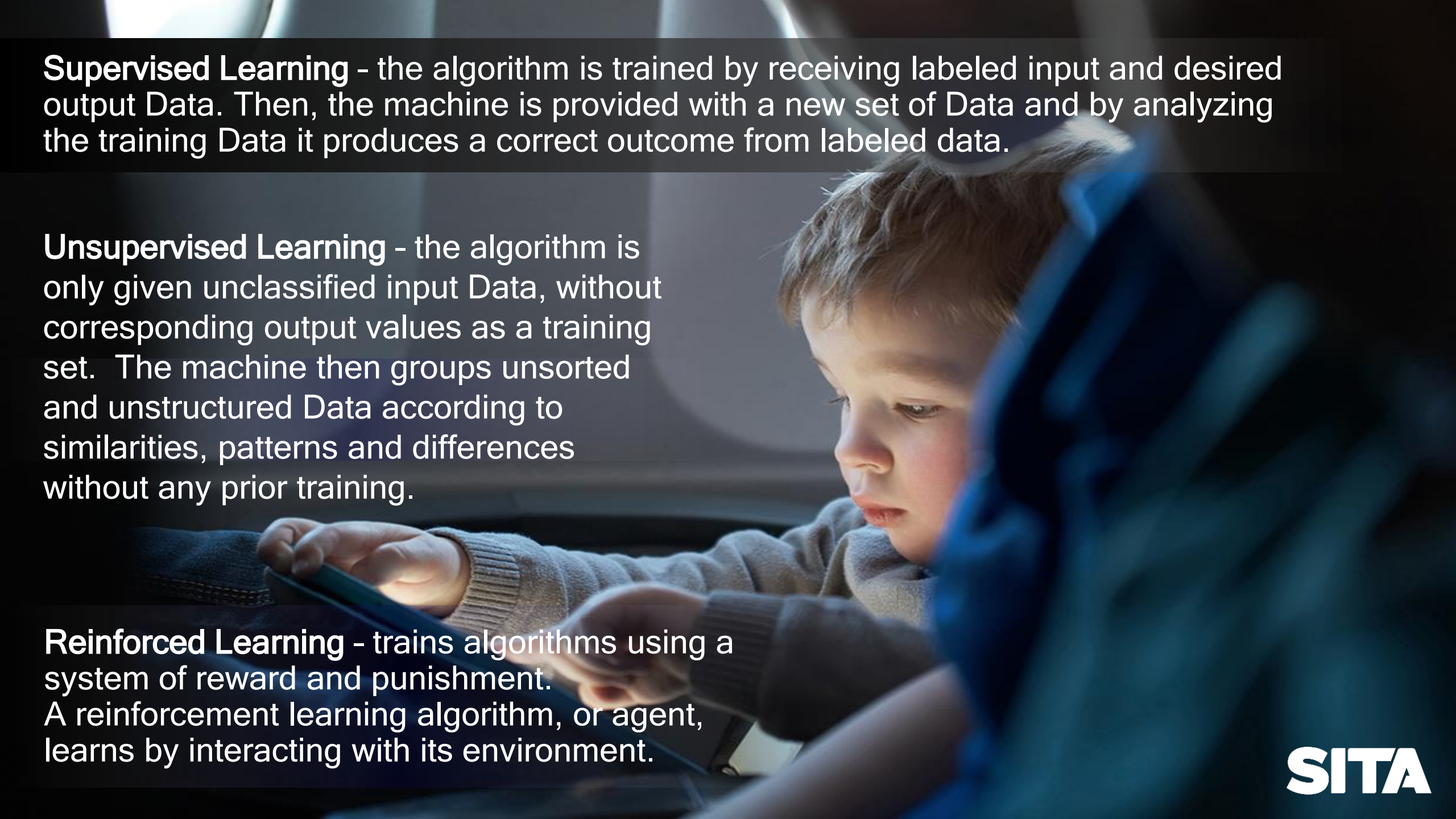

Supervised Learning – the algorithm is trained by receiving labeled input and desired output Data. Then, the machine is provided with a new set of Data and by analyzing the training Data it produces a correct outcome from labeled data.

Unsupervised Learning – the algorithm is only given unclassified input Data, without corresponding output values as a training set. The machine then groups unsorted and unstructured Data according to similarities, patterns and differences without any prior training.

Reinforced Learning – trains algorithms using a system of reward and punishment.
A reinforcement learning algorithm, or agent, learns by interacting with its environment.

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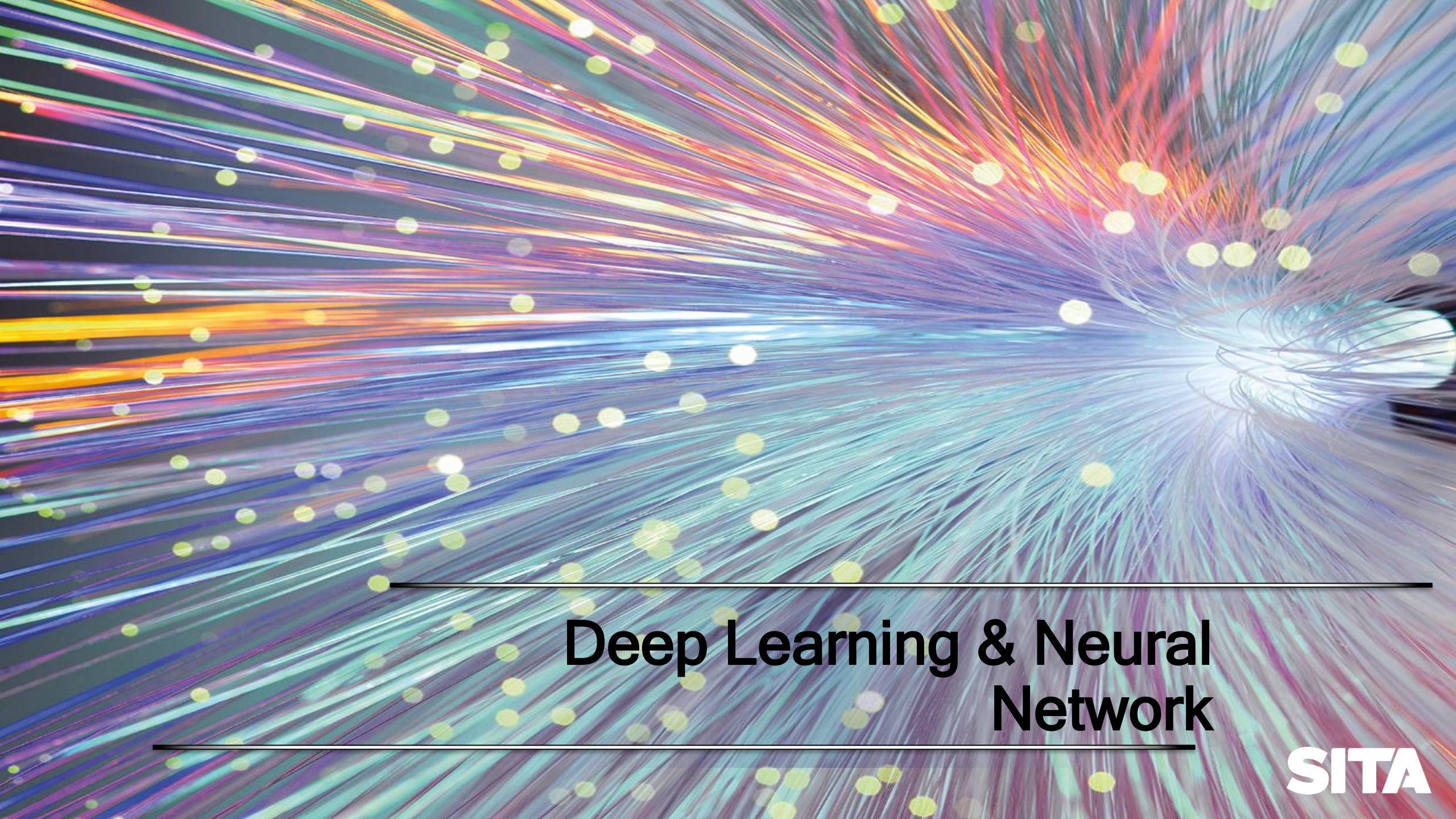
Deep Learning & Neural Network
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Deep Learning - human brain inspired algorithms creating Artificial Neural Networks, with various deep layers, that enable the algorithm to learn from large amounts of Data. The deep learning algorithm performs a task repeatedly, each time tweaking it a little to improve the outcome.

Artificial Neural Networks - collection of small computing layers units capable of modeling and processing nonlinear relationships between unstructured Data inputs and outputs, allowing the algorithm to continue learning from observed Data to improve the model.

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What do we need A.I. for?

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A.I. in Airports

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A.I. & Weapon Detection

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A.I. & Baggage Mishandling

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Parameters influencing baggage mishandling

- ground handler service level
- characteristics of the terminal
- peak time
- connections
- bag characteristics – color, class

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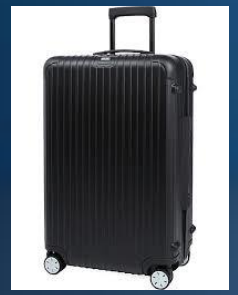
Bag Characteristics can be worked by A.I. to reduce mishandling levels







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A.I. with Bag Image Classification by conveyability

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A.I. with Bag Image Classification by Tray Requirements

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A.I. with IATA Resolution 753 Tracking Data

- deep knowledge of baggage processing
- detect anomalies
- real time information to improve turnaround time
- predict traffic and better manage resources allocation

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Aircraft Turnaround

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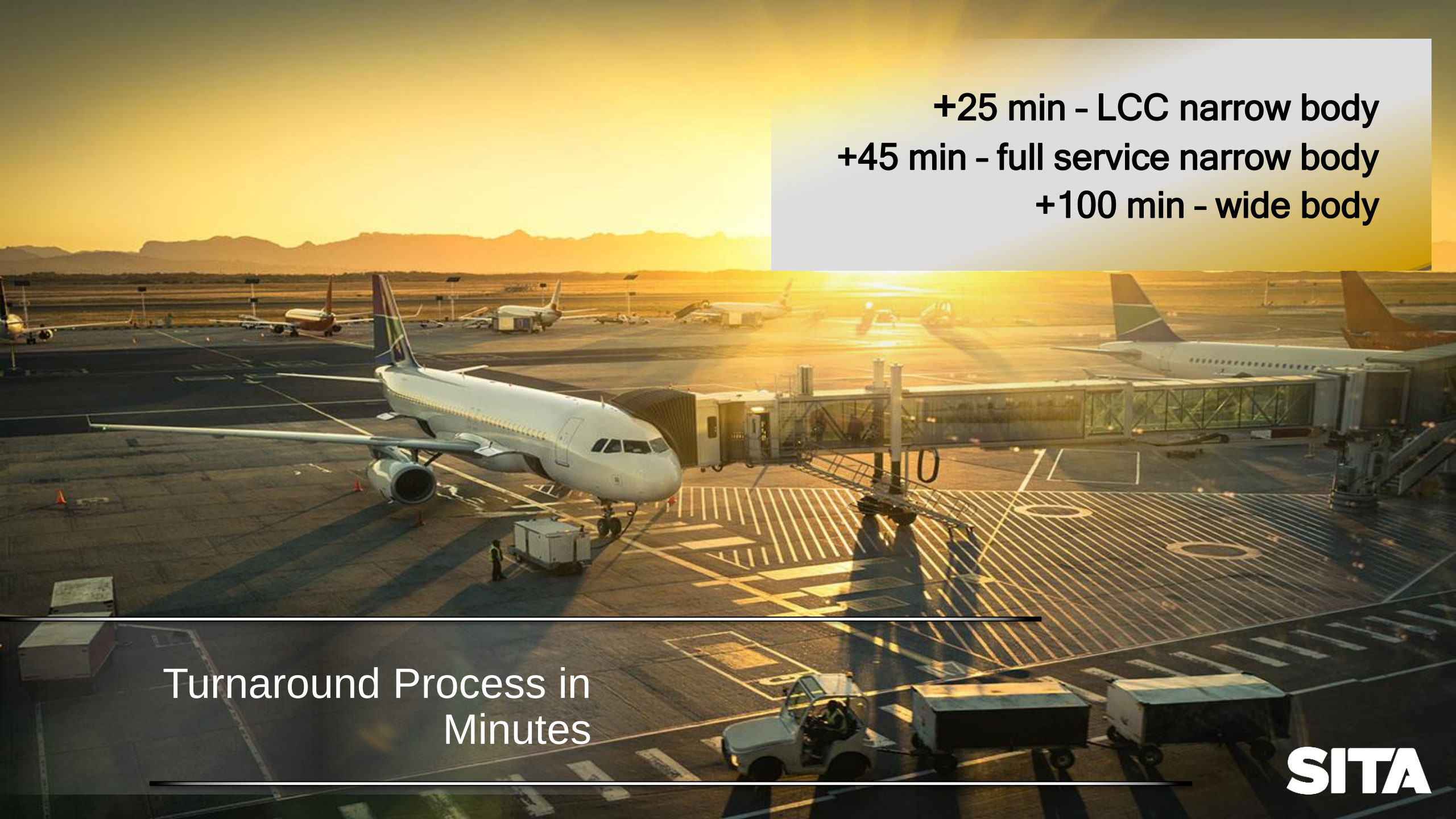

Turnaround Process in Minutes

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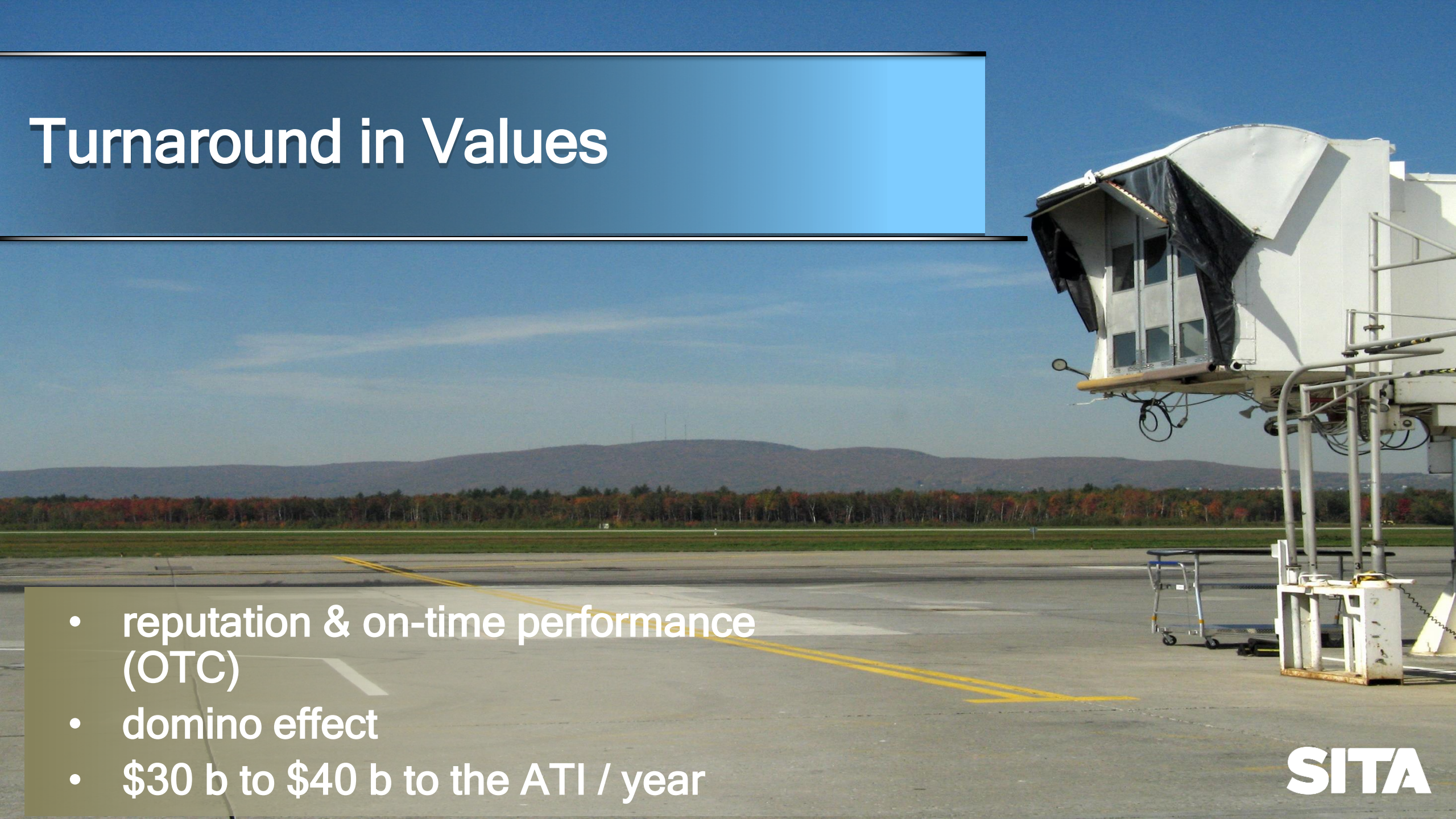
Turnaround in Values



- reputation & on-time performance (OTC)
- domino effect
- $30 b to $40 b to the ATI / year

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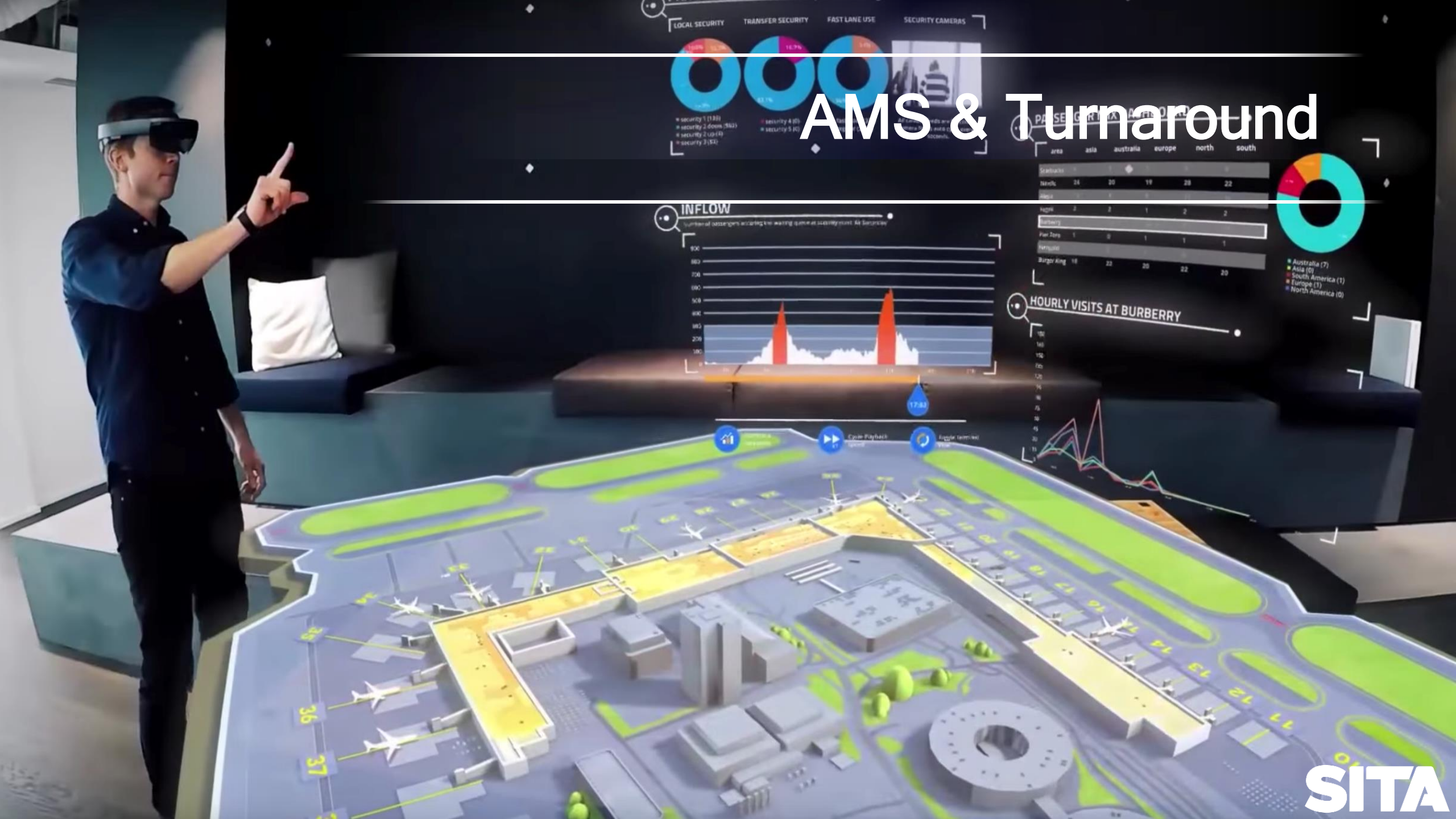

AMS & Turnaround

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Computer Vision and AMS

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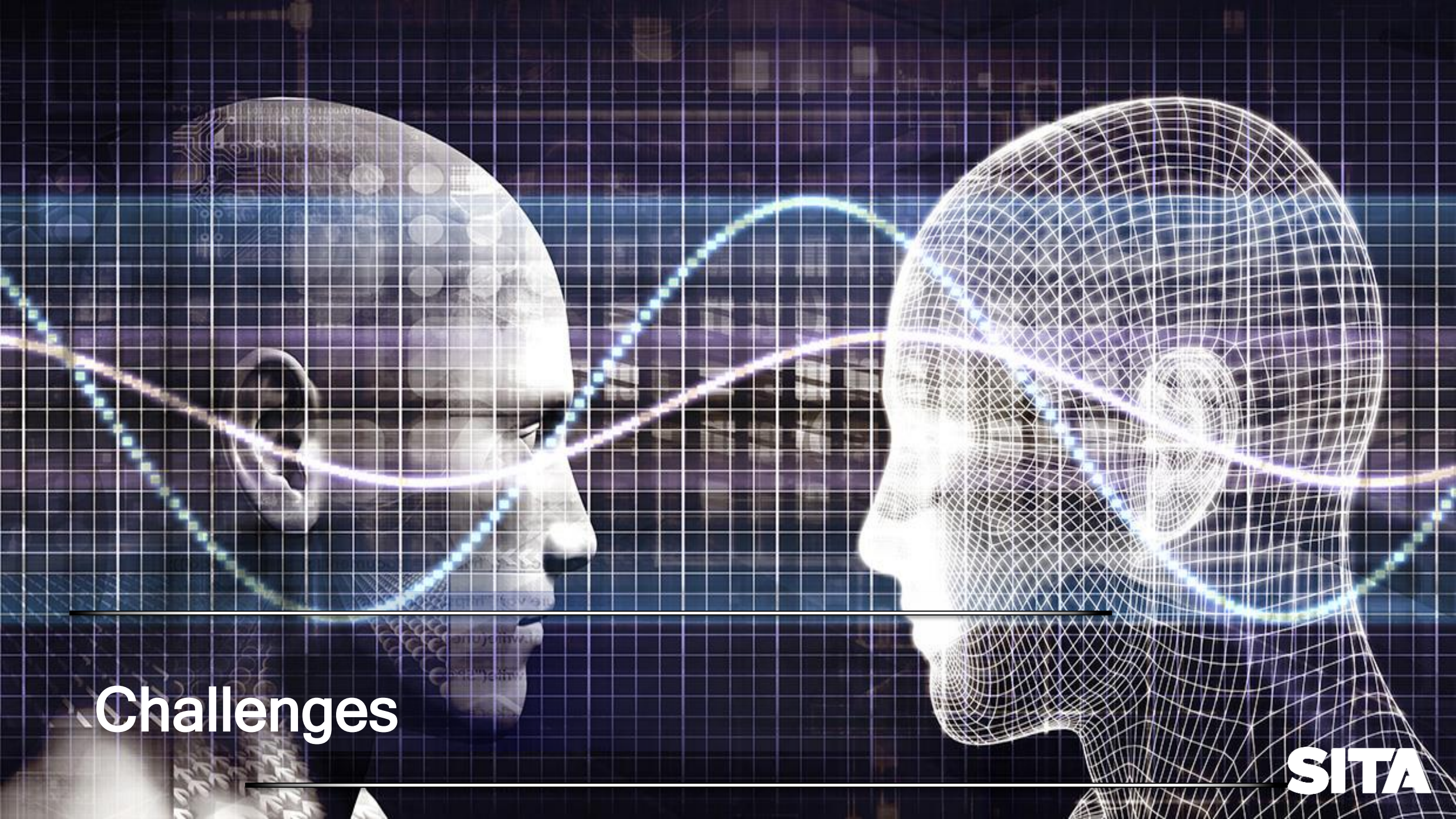


Challenges

Considerations for Lawyers Advising Airport Clients

- Privacy
- Ethics
- Data Usage
- Obligations of Supervision - Unintentional Harm

Technology Provider

100%

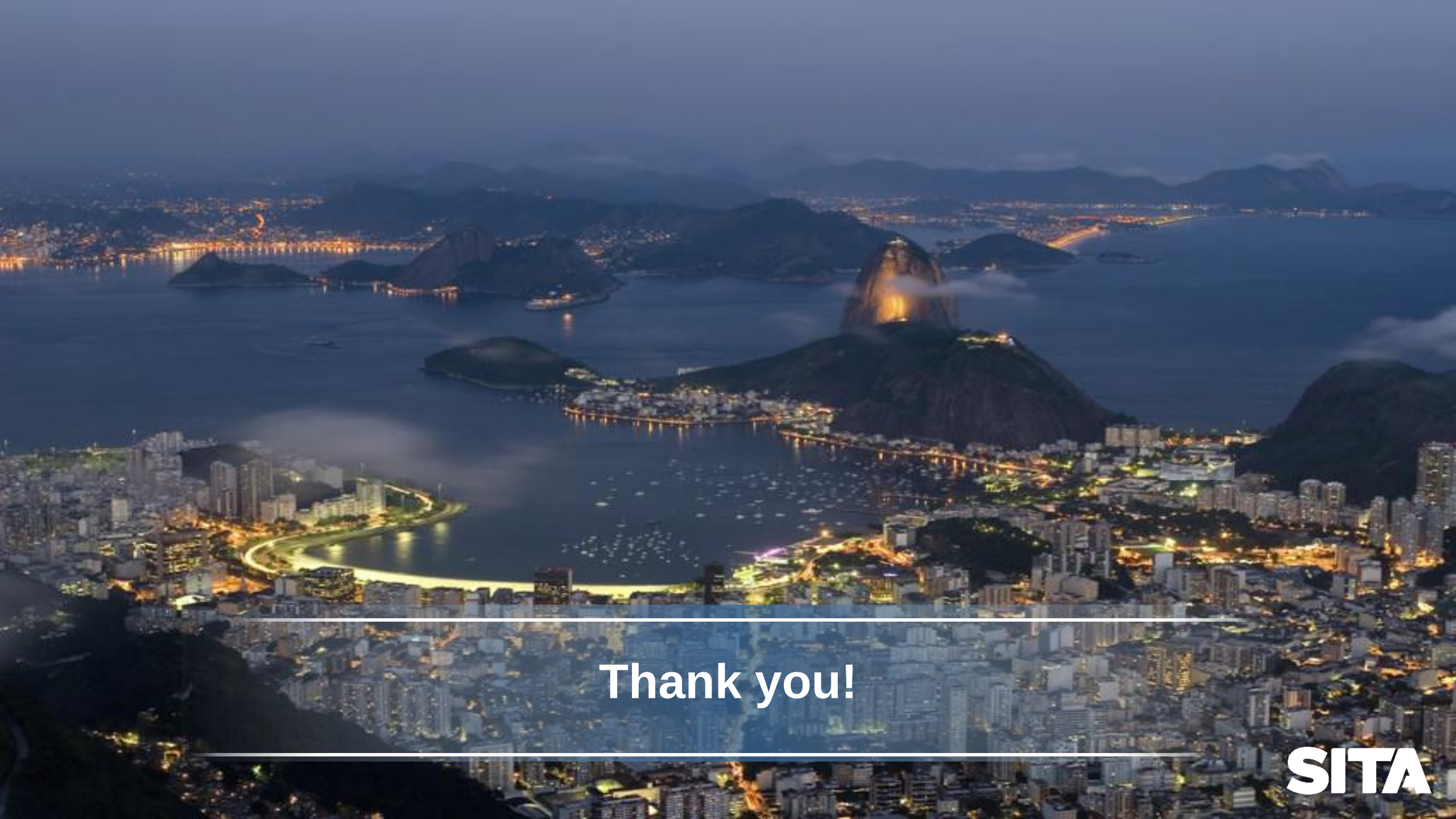
dedicated to the ATI

2,800+

airlines, airports, gouvernements ... work with us

1,000+

airports at +200 countries and territories


Thank you!

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