



CONNECTED GROUND SERVICE EQUIPMENT (GSE)

HCL's IOT-enabled solution for tracking and monitoring airline assets

INTRODUCTION



In a world inundated with waves of disruptive technologies, few tides are as certain as the coming of the Internet of Things and its potential to change the way we live, travel, and operate businesses.

It's time to look beyond smart machines & devices. It's time to understand how the ecosystem of connected systems can help realize new values for your customers and your business. HCL can be your end-to-end partner in the IoT journey.

For the airline sector, IoT offers multiple opportunities to improve operational efficiency and offers increasing personalization to travelers. It even has the potential to fundamentally change the core of conventional business models. In fact, there are so many potential application areas for IoT that the real challenge is to identify core focus areas of efforts.



CHALLENGES

Ground handling is a key component of the airline and airport operations as it facilitates the movement of cargo and people from one destination to another.

Poor Forecasting

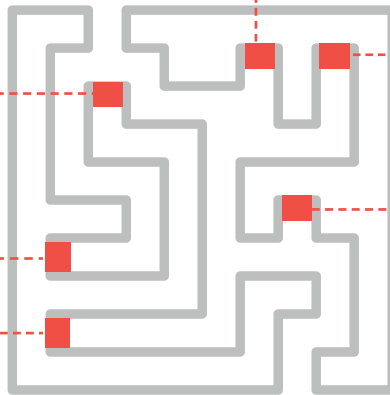
Lack of forecasting and planning due to non-availability of data analytics

Manual Task Assignment

Manual work orders and task assignment leading to miscommunication and duplicate assignments

Low Cost Efficiencies

Equipment downtimes, flight delay/extended ground time for (flights) due to late equipment positioning



Lack of Transparent Processes

Non-availability of exact GSE logs as per flight, time and utilisation for correct and transparent billing

Low Asset Visibility

Tracking of assets and operators in real time not possible, resulting in reduced utilisation and lack of real-time guidance

Poor Asset Utilization

Optimum usage of motorised as well as non-motorised equipment not possible due to lack of usage data

AREAS IMPACTED

Flight OPS

- Delayed deployment of GSE/Operators leads to delays in turnaround time
- Airline OTP hampered due to avoidable delays

Operators Performance

- No real-time tracking of equipment and operators' performance
- Unable to plan proactive training for operators needing improvement

Safety and Security

- Prevents unauthorized access of equipment
- Safety violation incidents or accidents not reported

Asset Inventory Management

- GSE utilization not monitored for uniform use of assets
- Real-time monitoring of asset utilization not possible

Maintenance Schedule

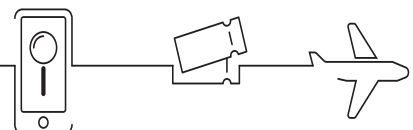
- Lack of predictive maintenance
- Maintenance schedule impacts regular operations

Operational Silos

- Operators and assets assignment done in siloes which leads to miscommunication
- Unable to jointly analyze operator and equipment data for improving efficiency

Ground Handling

- Mapping of operators and equipment not done
- Manual assignment leads to disparate allocation of GSE and operators leading to delays caused by GHA



THE SOLUTION

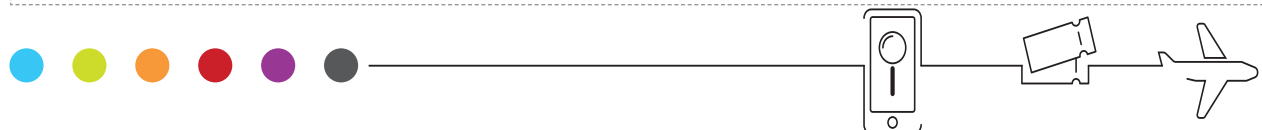
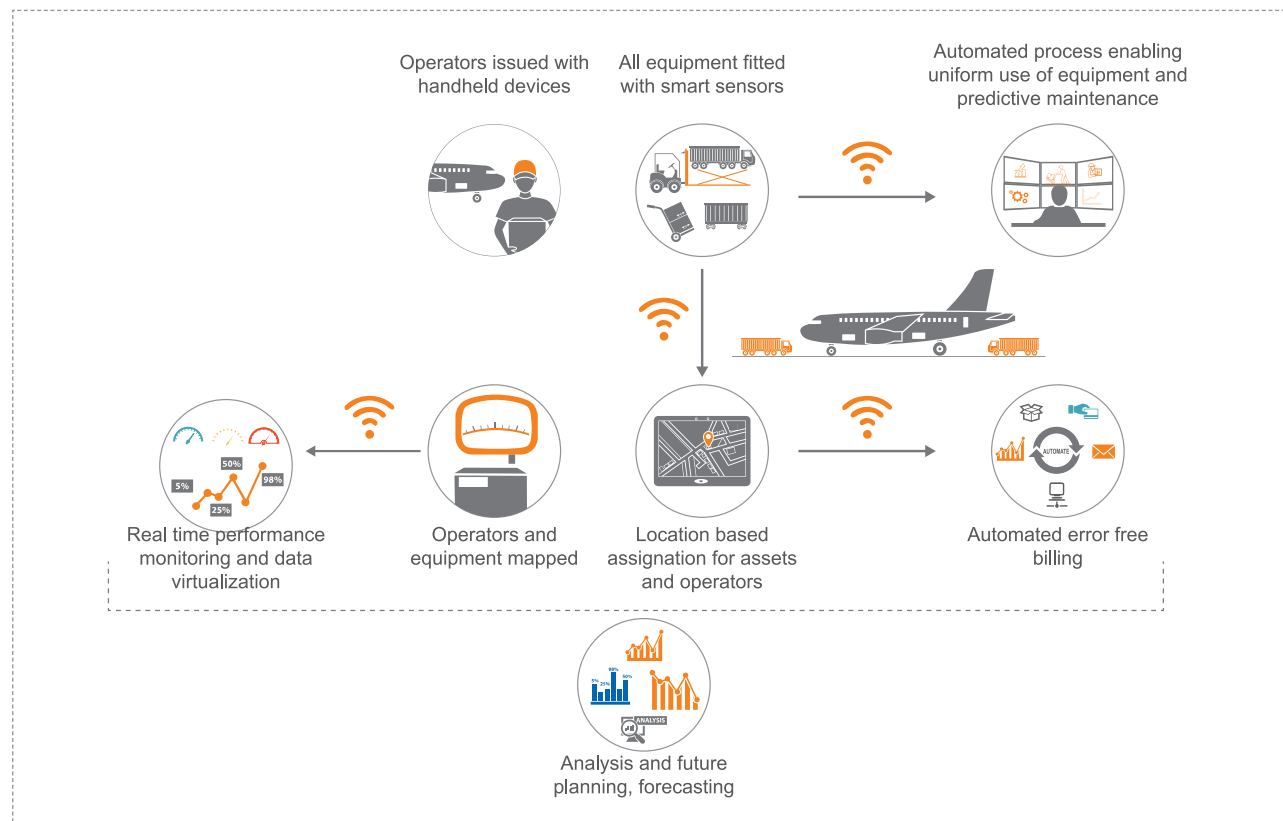
Today, smart devices with intelligent sensors can send information about the location and condition of the ground service equipment in real-time. This real-time visibility created by these smart devices will allow equipment owners and handlers to better plan their utilization and reduce buffer inventory investments, and prevent unauthorized access and movement of equipment. While these solutions help address specific yet pertinent pain points, the complete value is realized only when the data generated by these systems is made available on a central, coherent IoT platform for enterprise integration and in-depth analysis to deliver tangible business outcomes.

By leveraging the power of data analytics, businesses can further realize disruptive changes in their business model by adding on new revenue streams and offering greater value for money to customers.

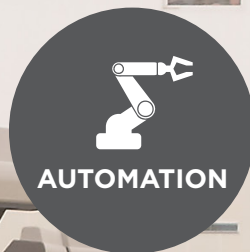
HCL's IoT Smart Devices enabled GSE operations are what the industry requires at this crucial juncture. It provides higher optimization levels to drive performance and reduce costs.

Some of the key solution enablers are:

1. IoT smart devices
2. Connectivity
3. Central IoT platform
4. Assignment
5. Performance monitoring
6. Maintenance
7. Automation



KEY FEATURES OF SOLUTION



SOLUTION BENEFITS

HCL's IoT enabled Ground Service Equipment (GSE) offering is one of our newest addition. This solution not only automates tracking and monitor of equipment's but also help in increasing fuel efficiencies by reducing aircraft idle time at the airport.



**REAL-TIME MONITORING
OF EQUIPMENT/
OPERATOR'S USING IoT**



**100% TRACKING OF
THE EQUIPMENT AND
OPERATOR PERFORMANCE**



**LOCATION-BASED
TRACKING AND
REAL-TIME TASK
ASSIGNMENT SPEED
LIMITS AND DRIVER
PERFORMANCE**



OPTIMUM USE OF GSE'S

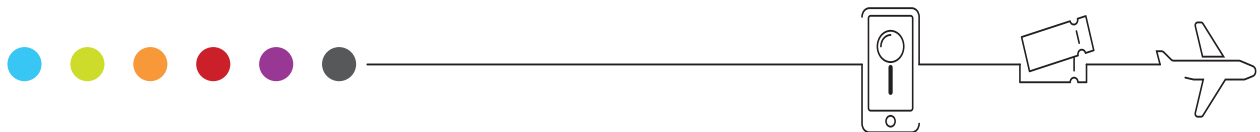


**AUTOMATED & ERROR
FREE PROCESS**



HCL APPROACH

HCL's Approach is structured around the emergence of an IoT ecosystem which has given rise to an asset value chain comprising of connections of things, data, process and people. Soon, thousands of sensors will be embedded in each aircraft, allowing data to be streamed down to the ground in real-time. And who knows, in time, this could drive the ubiquitous black box to become simply a backup device!





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