

A close-up photograph of a person's hand holding a smartphone. The person is wearing a green shirt. The background is a blurred city street with a red car and other vehicles.

Whitepaper

# Mitigating COVID-19 safety concerns using a cloud-based system

**init**  
The Future of Mobility

*Many agencies are experiencing huge reductions in ridership during the COVID-19 pandemic. Others are seeing bus services slashed causing overcrowding on subways and trains at a time when social distancing is most critical. Making sure “essential workers” stay safe while taking public transit is especially important during the pandemic as these folks don’t have the option to work from home.*

# Mitigating safety concerns during COVID-19

The APTA Operating Practices Working Group (OPWG) currently gathers data from all agencies around the country on how their ridership is affected. Never before have agencies needed accurate and real time ridership data more in order to dynamically plan their everyday services.

A first step, however, is making sure standard procedures are in place. INIT uses a powerful tool called Object Maintenance Information System (OMIS) with dual purpose: 1. The tool is used to monitor and maintain the Automatic Passenger Counting equipment to ensure it is working correctly. 2. The tool is used to track and maintain the cleaning efforts of the vehicles to reduce / prevent the spread of the COVID-19 virus.

With such a system, agencies get daily critical notifications about cleaning procedures (Figure 1) and are alerted to any defects on certain equipment on a train or bus. This information is also directly shared with stakeholders so


safety liabilities are reduced, and faulty equipment can be repaired quickly.

FTA Accurate ridership reporting is naturally important for FTA funding, but it is especially essential in being able to document and receive support due to the negative effects on ridership during the current coronavirus crisis.

In addition, Automated Passenger Counting (APC) data is received after a train leaves the station. However, real-time ridership data are becoming more important because with it, operators can actively cancel doors on a specific car or direct passengers if they determine that a passenger load is reaching a certain threshold. This real-time counting information would aid in keeping some social distancing with passengers, subsequently relieving the angst of “essential personnel” riders during this pandemic, as well as preventing the spread.

Vehicle number	RTD_114	ObjectID	5285	06/04/2020
Address:	80110 S Elati St	Denver	2701	
Inspection type	COVID-19			
Inspection date:	06/04/2020 10:19:06	Light Rail Maintenance	Cleaning Procedures COVID-1	
Mop floors	Using a proper concentration mix of disinfectant	Done	Not done	
		X		
Step wells	Using a proper concentration mix of disinfectant	Done	Not Done	
		X		
ADA ramp	Using a proper concentration mix of disinfectant	Done	Not done	
		X		
Stanchions	Using a proper concentration mix of disinfectant	Done	Not Done	
		X		
Hand Railings	Using a proper concentration mix of disinfectant	Done	Not done	
		X		
Hand straps	Using a proper concentration mix of disinfectant	Done	Not done	
		X		
Doors and handles	Using a proper concentration mix of disinfectant	Done	Not done	
		X		
Backs of doors	Using a proper concentration mix of disinfectant	Done	Not done	
		X		
Wells, side wells, bulkhead wells	Using a proper concentration mix of disinfectant	Done	Not done	
		X		
Ceilings	Using a proper concentration mix of disinfectant	Done	Not done	
		X		
Lights and fixtures	Using a proper concentration mix of disinfectant	Done	Not done	
		X		
Articulating section	Using a proper concentration mix of disinfectant	Done	Not done	
		X		
Overhead panels	Using a proper concentration mix of disinfectant	Done	Not done	
		X		

Figure 1: Cleaning checklist



“Unless you can accurately identify the negative effects the coronavirus pandemic has had on your system, relief funding, and funding in general will be harder to justify.”

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## Making Informed Decisions

Setting high benchmarks allows agency stakeholders to make informed decisions about which services to tailor in a well-timed manner. INIT's Object Maintenance Information System (OMIS) is providing the valuable information that helps agencies quickly adapt in changing situations.

For instance, agencies can use valuable data with:

- Transparency in the form of web-based test reports which can be accessed by all agency stakeholders and viewed historically during the maintenance or commissioning process.
- Data for vehicle cleanings with assurance that all components were covered.
- Information on GTFS stop identifications.

- Data on defective components. For instance, vehicles which are reporting out of specification as it pertains to APC quality and vehicles which do not report APC data at all are flagged for both the data analytics team and maintenance personnel to see.

- Work order notifications for issue resolution.

While the FTA does not certify specific products, the implementation of OMIS is clearly beneficial as it can be used in the maintenance plan required for NTD reporting. Remember? Ridership data and funding are tied hand in hand. Unless you can accurately identify the negative effects the coronavirus pandemic has had on your system, relief funding, and funding in general will be harder to justify.

By adding a feedback loop from a systemic perspective, you can promote neg-entropy or the systemic promotion of order within the system which is critical during times like we are experiencing now.

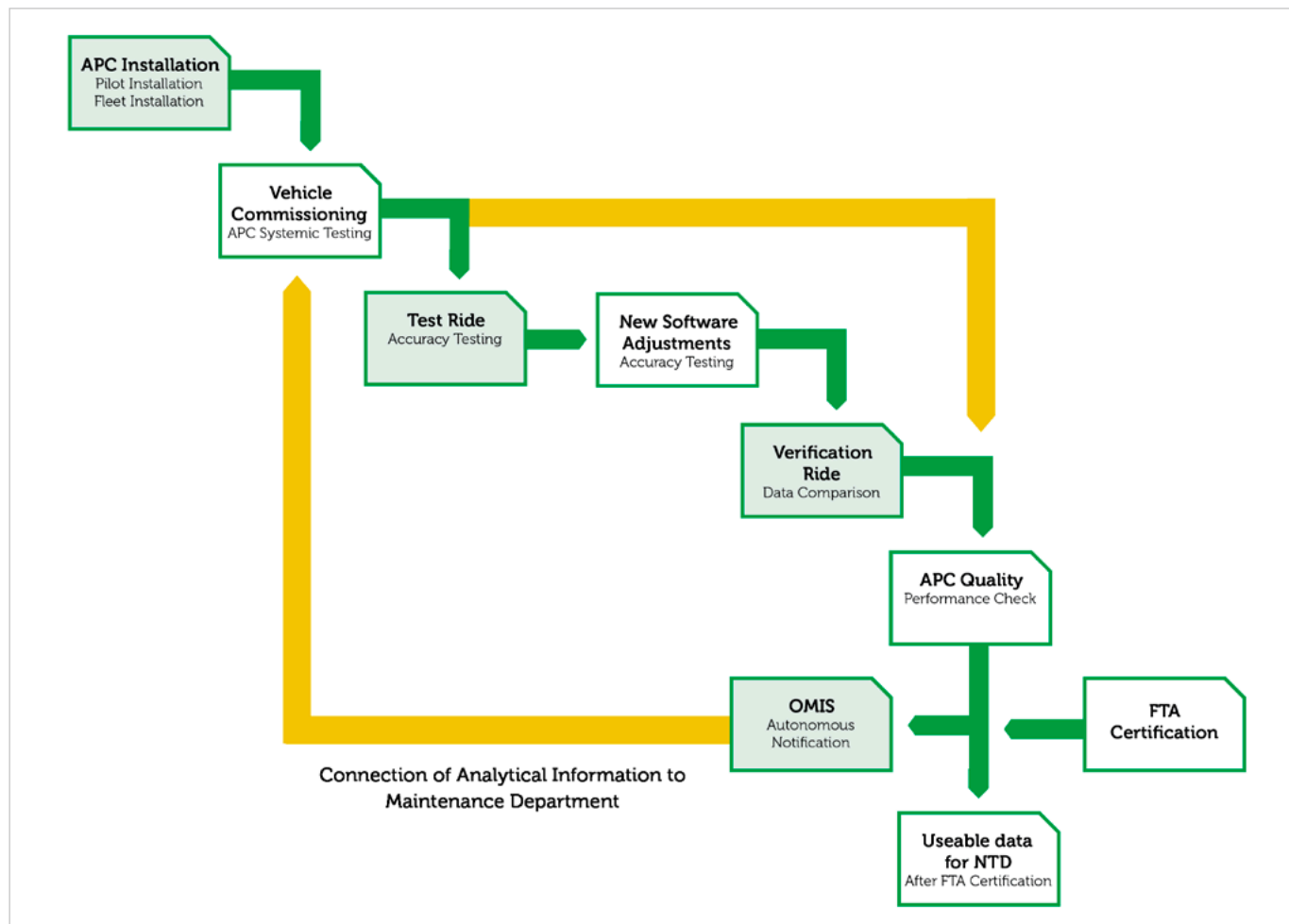
## Technical solutions for critical situations

Having the technical solution available to receive information regarding the working status for individual APC units is a great advantage. It allows for improvement of the quality of annual total unlinked passenger trips (UPT) and passenger miles traveled (PMT) from available APC data. Hence, the need for an object maintenance information system. However, the solution is not only a viable option as it pertains to APC components but can also be used to serve a wide array of transit needs including for GTFS Stop ID technologies which are becoming the next requirement for accurate passenger counting.

OMIS delivers a cloud-based commissioning of vehicles with daily email notifications based on the completion of commissioning/acceptance tests for each of the accepted vehicles.

- Creating checklists using cell phones
- Vehicle testing/acceptance with signoff via a tablet
- Interfacing with Asset management systems
- 100% in house testing of vehicle hardware before shipping to OEM vendors
- Creating acceptance sheets during commissioning process

Figure 2: Process flow of vehicle commissioning



## Reporting Dashboards

When entering the OMIS User Interface (UI), the dashboard will be the first item seen. On this dashboard there are four areas of importance: the navigation panel, the filtering menu, the user setting, and the main screen. The figure below will show the location of each of these points respectively. Most important is the view of open vehicle reports. Daily, OMIS sends work order notifications to the maintenance team or interfaces directly with the asset management system if the interface is arranged.

## Conclusion

More importantly, the integrated OMIS solution provided by INIT can not only better prepare transit agencies in the event of unplanned disasters such as COVID-19 but can continually promote quality performance of vehicles throughout the life cycle of vehicles.

For more information, read our case study: [Denver RTD Boosts Data Accuracy with Object Maintenance Information Tool](#), or [request a free web session demo](#) on how to improve your data.

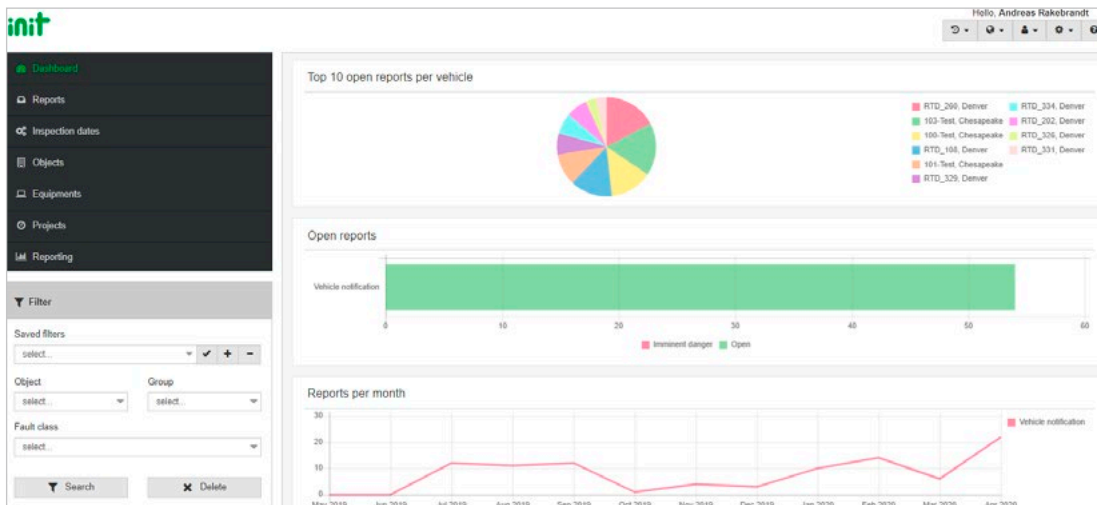


Figure 3:  
Navigation, filter,  
user setting and  
main screen

The screenshot shows an email inbox interface with tabs for 'All' and 'Unread'. The email list has columns for 'From', 'Subject', 'Received', and actions. All emails are from 'Omni' and are vehicle notifications. The table below represents the data shown in the screenshot.

From	Subject	Received	Action
Omni	RTD_120 - Denver, S Elati St 2701 - 18027 - Vehicle notification	Fri 4/3/2020...	Unread icon
Omni	RTD_108 - Denver, S Elati St 2701 - 18026 - Vehicle notification	Fri 4/3/2020...	Unread icon
Omni	RTD_260 - Denver, S Elati St 2701 - 18025 - Vehicle notification	Fri 4/3/2020...	Unread icon
Omni	RTD_277 - Denver, S Elati St 2701 - 18024 - Vehicle notification	Fri 4/3/2020...	Unread icon
Omni	RTD_275 - Denver, S Elati St 2701 - 18023 - Vehicle notification	Fri 4/3/2020...	Unread icon
Omni	RTD_123 - Denver, S Elati St 2701 - 18022 - Vehicle notification	Fri 4/3/2020...	Unread icon
Omni	RTD_329 - Denver, S Elati St 2701 - 18021 - Vehicle notification	Fri 4/3/2020...	Unread icon
Omni	RTD_115 - Denver, S Elati St 2701 - 18020 - Vehicle notification	Fri 4/3/2020...	Unread icon
Omni	RTD_117 - Denver, S Elati St 2701 - 18019 - Vehicle notification	Fri 4/3/2020...	Unread icon
Omni	RTD_269 - Denver, S Elati St 2701 - 18018 - Vehicle notification	Fri 4/3/2020...	Unread icon
Omni	RTD_104 - Denver, S Elati St 2701 - 18017 - Vehicle notification	Fri 4/3/2020...	Unread icon

Figure 4:  
Daily vehicle  
notification for  
each vehicle  
defect to inform  
the maintenance  
team



*If you would like to know more about OMIS, please contact  
Andreas Rakebrandt at [arakebrandt@initusa.com](mailto:arakebrandt@initusa.com). We look forward to hearing  
from you.*

*More than 700 customers worldwide rely on our integrated solutions  
to support them with their daily tasks*

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- *Ticketing & Fare Management*
- *Operations Control & Real-Time Passenger Information*
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*They also benefit from our proven service & maintenance support and can master  
the challenges of electromobility with our integrated solutions.*

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