MTA Press Releases

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NYC Transit IMMEDIATE

MTA Announces Launch of “The MTA Genius Transit Challenge”

World-Class Panel of Engineers, Technology Experts and Thought Leaders will gather June 29th at City College Great Hall

The Metropolitan Transportation Authority (MTA) today announced the launch of the "MTA Genius Transit Challenge," an international competition seeking groundbreaking and innovative solutions to increase the capacity and improve the reliability of New York City's subway service. The competition will challenge participants to find solutions for the system that can be implemented quickly and efficiently. The status quo and industry standards currently take too long to implement and cannot improve service as expeditiously as is needed.

The competition will begin June 29 with a conference at the City College of New York's Great Hall. Governor Andrew M. Cuomo announced his intention to give three $1 million “genius” awards, paid by New York State for the best ideas in each of three categories. Competitors will be presented with the issues, current solutions and best practices and will be judged by an expert panel of technology and transportation experts in each of three categories:

- **How to Improve the New York City Subway’s Signal System:** To address the aging signal system in a faster and more efficient way to enable the MTA to expand the number of trains per hour during peak periods;
- **How to Bring Better Subway Cars to the System:** To address the subway system’s aging cars. Strategies can include the refurbishment of current subway cars, upgrading existing systems, better maintenance programs/protocols, and faster delivery of new cars;
- **How to Increase Communications Connectivity in Subway Tunnels:** To design communications technology for cellular and WiFi connectivity that can be installed throughout the entire subway system including tunnels.

“Governor Cuomo challenged the MTA to look far and wide for solutions to the systemic problems that have plagued our subway system for years and to reimagine traditional solutions to reduce delays and relieve overcrowding,” said **MTA Interim Executive Director Ronnie Hakim**. “This challenge is accepted and wholly embraced by the MTA.”

The expert panel that will judge the competition and help guide participants including engineers, thought leaders, and experts who have developed significant expertise in wireless technology, manufacturing, business and railroad operation. Representatives from New York City and the surrounding region will also participate in judging the competition.

The MTA Genius Transit Challenge panelists will include:

- Sarah Feinberg, Former Administrator, Federal Railroad Administration: Ms. Feinberg led the Federal Railroad Administration from January 2015 to January 2017. She previously served as Chief of Staff to United States Secretary of Transportation Anthony Foxx, managing DOT’s ten modal organizations, and spearheading its legislative, policy and communications efforts. Prior to her service at USDOT, Ms. Feinberg served in the White House, on Capitol Hill, and worked in the tech industry.
- Daniel Huttenlocher, Dean and Vice Provost, Cornell Tech: Mr. Huttenlocher is the Founding Dean and Vice Provost of Cornell Tech, where he has overall responsibility for the new campus, including the academic quality and direction of the campus' degree programs and research. He currently serves on the Board of Directors of Amazon Inc., Corning Inc. and the John D. and Catherine T. MacArthur Foundation.
- Charles Phillips, CEO, Infor; Former Co-President and Director, Oracle: Mr. Phillips is CEO of prominent NYC-based software company Infor. Prior to Infor, Mr. Phillips was President of Oracle Corporation and a member of its Board of Directors. Mr. Philips previously served as Managing Director in Technology Group at Morgan Stanley.
- Kristina Johnson, Chancellor-elect, SUNY: Dr. Kristina M. Johnson is the 13th chancellor of SUNY, the largest comprehensive system of public higher education in the United States. Dr. Johnson is an inventor and entrepreneur who holds 118 U.S. and international patents.
- Greg Brown, Chairman and CEO, Motorola Solutions: Mr. Brown is Chairman and Chief Executive Officer of Motorola Solutions, where he has led the company for a decade. He serves as chair of the Rutgers University Board of Governors, chair of Skills for Chicagoland’s Future and chair of the committee on Immigration Reform of the Business Roundtable.
- Nick Grossman, General Manager, Union Square Ventures: Mr. Grossman is General Manager at Union Square Ventures, where he explores new investments, works with USV's portfolio companies on trust, safety and security issues, and leads USV's efforts on public policy, regulatory and civic issues. Previously, he led an incubator for startups at the intersection of cities and data at OpenPlans. Nick has a degree in Urban Studies from Stanford University.
- Eliot Horowitz, Co-founder and Chief Technology Officer, MongoDB: Mr. Horowitz is the CTO and Co-Founder of MongoDB. He wrote the core code base for MongoDB starting in 2007, and subsequently built the engineering and product teams. Prior to MongoDB, he co-founded and built ShopWiki, a groundbreaking online retail search engine.
- Balaji Prabhakhar, Professor of Electrical Engineering and Computer Science, Stanford University: Mr. Prabhakhar is a professor in the departments of electrical engineering and computer science at Stanford University, where research focuses on the design, analysis, and implementation of data networks: both wireline and wireless. He has led the development of industry standards for computer network congestion management, and serves on the Advisory Board of the Future Urban Mobility Initiative of the World Economic Forum.

The Challenge
The New York City subway system operates 665 miles of track, 24 lines, and operates 24 hours a day, 7 days a week, and 365 days a year. Demand for service is at historic levels with ridership of 6 million people per day. New York City Transit must innovate to accommodate a growing demand and to continue to be the economic engine of the city, state, and region.

The Signal System
The existing fixed-block signal system was designed over a century ago and now requires constant repair and is increasingly less reliable. The current $29.5 billion MTA Capital Plan includes more than $2.75 billion for signals, with more than $1 billion for installation of Communication Based Train Control. Other signalization investments include roughly $850 million to modernize six signal interlockings and $250 million to upgrade conventional signals.

The improvement in signalization is designed to increase the number of trains at peak periods. This competition is seeking to accelerate the implementation of these solutions to bring better and more reliable signal service to the system faster.

Subway Cars
Subway car doors open and close roughly 7 million times daily – and doors are the primary cause of car-related failures. Currently, the fastest a new car can be built is three years. The MTA is expediting the delivery of 300 new R179 subway cars with the first arriving fall 2017 and delivery to be completed by September 2018. Additionally, New York City Transit will accelerate the delivery of 450 new R211 cars.

The car renovation project is looking for strategies to get more new subway cars faster, or refurbish existing cars to increase reliability, prevent breakdowns, and reduce delays.

The MTA's recently announced six-point plan tackles frequent issues that cause disruption to service and discomfort to riders – including stuck doors, master controller systems, and heating and air conditioning. The transit system needs a more comprehensive, diagnostic data-driven approach that allows for predictive maintenance rather than corrective maintenance.

Communications and Connectivity in Subway Tunnels
The MTA succeeded in delivering cellular and Wi-Fi connectivity to every station in the system by the end of last year. However, connectivity in subway tunnels is still unavailable. Subway tunnels are narrow, which presents challenges in running cable and other necessary Wi-Fi equipment. Standard industry strategies would require completely shutting down train service to install Wi-Fi in tunnels.

The development of an alternative plan is a key concern of this challenge. For information about how to participate, visit www.ny.gov/MTAGeniusTransitChallenge.