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ABB controls and software to optimize electric bus operations

ABB Ability™ based solution to provide Geneva's public transport operator with real-time data and valuable insights to manage critical assets

ABB announced today that Transports publics genevois (tpg), Geneva's public transport operator in Switzerland, has placed an order for an ABB Ability based solution comprising a supervisory control and data acquisition (SCADA) system and enterprise asset management (EAM) software. The solution will help optimize the TOSA (Trolleybus Optimisation Système Alimentation) fully electric buses (e-buses).

The ABB Ability Network Manager SCADA system will be used to monitor and control the power network for the charging stations and e-buses, maximizing availability and operational efficiency. It will be integrated with the ABB Ability Ellipse Select, EAM software with embedded best-practice parameters and industry specific workflows. This will further optimize maintenance processes, enable a fast response to fault incidents and better predict maintenance needs. The overall solution is also equipped with remote access and 'cloud' capabilities and is scalable to meet future needs.

In 2016, ABB was contracted by TPG and Swiss bus manufacturer HESS, to provide flash charging and on-board electric vehicle technology for 12 TOSA e-buses for Line 23, which will connect Geneva airport with the suburbs. This route is expected to carry 10,000 passengers a day and reduce carbon emissions by up to 1,000 tons per year. The project is supported by the Swiss Federal Office of Energy (SFOE) as part of a flagship programme.

As part of this project, ABB is deploying 13 flash-charging stations, three terminal and four depot feeding stations along the transit bus route. The flash-charging connection technology will be the fastest in the world, connecting the bus to the charging point in less than 1 second. The onboard batteries can then be charged in 15 seconds with a 600-kilowatt power boost at the bus stop. A further 4 to 5 minute charge at the terminus at the end of the line enables a full recharge of the batteries. The e-buses require no overhead lines and offer silent and zero-emission mass transit solution as a viable alternative to diesel buses, providing a model for future urban transportation.

"Our ABB Ability based integrated SCADA and Enterprise Asset Management software solution will provide TPG with actionable real-time data and valuable insights to optimize operations and enable predictive maintenance" said Massimo Danieli, head of ABB's Grid Automation business within the company's Power Grids division. "Leveraging software solutions that enable our customers to better manage their critical hardware assets, is part of our digitalization focus within our Next Level strategy as demonstrated in this sustainable mobility project."

"This innovative solution will help us to proactively manage and maintain our critical e-bus assets, enabling more timely and effective decisions. In addition to cost optimization, this new technology will also result in higher availability and less service interruption for our commuters", said Thierry Wagenknecht, Technical Director of TPG. "It is another example of how we are striving to ensure operational reliability, efficiency and safety while providing the citizens of Geneva with sustainable transport."

ABB (ABBN: SIX Swiss Ex) is a pioneering technology leader in electrification products, robotics and motion, industrial automation and power grids, serving customers in utilities, industry and transport & infrastructure globally. Continuing a more than 125-year history of innovation, ABB today is writing the future of industrial digitalization and driving the Energy and Fourth Industrial Revolutions. ABB operates in more than 100 countries with about 132,000 employees. www.abb.com

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