

## **AN OVERVIEW OF AUTOMATIC IDENTIFICATION (AUTO-ID) IN THE SUPPLY CHAIN**

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### TUTORIAL ABSTRACT

Over the past decade, management has come to realize that one of the primary enablers of crafting a competitive advantage to ensure long-term profitability and sustainability is the efficient and effective management of their supply chains. The global plane that organizations are operating in today has necessitated most if not all businesses to collaborate and form partnerships with various other organizations around the globe and this has created an even more complex supply chain network. The trend towards business process outsourcing puts further pressure on the supply chain and its processes. As a consequence of all the above factors, the efficient and effective management of this complex network is imperative to ensure sound financial performance.

One of the key technologies that are coined to be the silver bullet for managing this complex supply network is Radio Frequency Identification (RFID). It enables the electronic labelling and wireless identification of objects using radio frequency communications. RFID tags can be attached to physical objects, which enable the objects to be tracked and identified remotely across the entire supply network, creating the always envisioned glass-pipe network. Although the technology has been in existence for decades, extensive research, new innovation and initiatives anchored by MIT's Auto-ID Centre, as well as key advancements in the information communication technology (ICT) infrastructure over the last few years, has set the stage for a phased adoption and eventually mass scale embracement of this technology, communally termed as Automatic Identification (Auto-ID). This is further reinforced by the fact that businesses have obtained extensive and concrete evidence that this technology will produce a high return on investment in the short and long term.

This tutorial presentation will commence with an introduction to Auto-ID and will proceed to highlight the key forces that are driving the embracement of this technology. It will then discuss the architecture of Auto-ID that enables it to serve as the underpinning infrastructure and mechanism for dynamic information generation. Next, the discussion will be framed around the key applications and advantages of Auto-ID, both within and external to the supply network. The general challenges that will need to be ironed out will then be discussed. Finally, an explanation on how Auto-ID is bridging the transition to the fourth information revolution will be put forward, where through the use of dynamic information, supply chain efficiency will be amplified and organizational profitability, agility and sustainability will be enhanced significantly.