

Q2 2020
Strategy Update

August 6, 2020

QUARTERHILL



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Quarterhill: a growth-oriented company in the Intellectual Property (IP) and Intelligent Transportation System (ITS) industries, pursuing an acquisition strategy that capitalizes on attractive trends in both ITS and its adjacent markets

Strategic Rationale for ITS

Attractive Market Dynamics	• With increased concern related to public safety and increasing traffic congestion, the ITS market is benefitting from government initiatives to protect roadways and while effectively managing traffic. • Governments are taking on new debt and are experiencing increased pressure to reduce deficits. ITS solutions provide for significant new revenue sources to governments.
More Reasonable Valuations	• There are fewer aggregators in the ITS market compared to markets like enterprise software.
Better M&A Performance	• IRD is a well-known and respected player in ITS - able to act as an “ear to the ground” to identify opportunities. • QTRH ITS credibility allows us to differentiate as an acquirer and create a more attractive offer during a competitive bidding process.
Reduced Integration Risk	• QTRH has an existing platform to integrate additional ITS businesses within IRD. • Having an experienced business sponsor will ensure the smooth integration of bolt-on acquisitions.
Synergies	• ITS acquisitions have the potential to realize revenue and cost synergies upon integration with IRD. • Ability to leverage WiLAN’s expertise as ITS becomes more connected (ie. 5G is core enabling technology).

Strategy Roadmap

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Systems + Applications

Intelligent Transportation Systems

Road Systems

- CVO
- ATMS
- ATIS
- Pricing Systems
- APTS

- Rail Systems
- Aviation Systems
- Maritime Systems

Smart Cities

- Smart Streets & Lighting
- Smart Infrastructure
- Digital Signage
- Smart Parking
- Access Control & Security

Smart Spaces

- Connected Mobility
- Energy & Utilities
- Connected Buildings
- Manuf. & Supply Chain
- Connected Healthcare

Enabling Technologies

- Edge Computing
- Artificial Intelligence
- Cloud Computing

Connectivity

- 5G Networking
- 4G Networking
- LoRa
- DSRC

WiLAN's Expertise

WiLAN™

ITS Road Systems Market Data



System	Market Size $USD, Billions					CAGR (2018-2023)
	2017	2018F	2019F	2021F	2023F	
ATMS	$7.8	$8.3	$8.8	$9.8	$10.8	5.3%
ATIS	$2.9	$3.1	$3.4	$3.8	$4.3	6.3%
Pricing Systems	$5.6	$5.9	$6.3	$7.1	$7.9	5.8%
APTS	$3.2	$3.4	$3.6	$4.0	$4.3	4.7%
CVO	$2.4	$2.5	$2.7	$3.1	$3.5	6.8%
Total	**$21.9**	**$23.3**	**$24.8**	**$27.8**	**$30.7**	**5.7%**

Market Share by Region	
North America	**38%**
Europe	**30%**
APAC	**22%**
RoW	**10%**

Source: Markets and Markets, Intelligent Transportation System Market, 2019

Future Trends in ITS

The ITS market is experiencing shifts in both business models and technological advancements

Evolving Business Models	• As DoTs grapple with reductions in capital budgets, an evolving trend is for them to shift towards DaaS/SaaS models. An opportunity exists to acquire a provider of DaaS or further develop software platforms to facilitate this shift. • New forms of mobility are accelerating the transformation of mobility solutions into a consumable service. QTRH's solutions will expand from CVO into broader ITS and eventually Smart Cities and Connected Mobility.
Evolving Technologies	• As IRD exploits AI to launch new applications, several opportunities exist to acquire technologies which include AI, to provide enhanced value to customers and enter new markets. • Existing technologies within ITS are employing AI to launch new applications.
Increased Connectivity	• With increased connectivity between vehicles, infrastructure, network, pedestrians, devices, and grids, the ITS market will continue to evolve and grow. • Increased connectivity, enabled by 5G, will present new and unique business opportunities that will evolve IRD's solution offerings by employing data analytics and predictive modeling related to the data collected from various sources.
Data Security & Encryption	• With advancements in connectivity, Data Security and the use of Encryption technologies will become increasingly necessary, and the adoption of Blockchain technologies will improve the relationship between technology and user privacy. • Cyberattacks create risk for all connected technologies. There will be several investment opportunities to bolster security.



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