

IoT @ Edge

seabed to space
robots to rockets

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Co-Chair: Innovation Task Group, Industrial Internet Consortium (IIC)



“”

In “edge computing,” therefore, applications, data, and services are pushed to the logical extremes of a network — away from the center — to enable analytics knowledge generation and immediate decision-making at the source of the data.

— Nicola Villa, Managing Director, Global Analytics Practice, Cisco Consulting Services

A man in a dark suit, white shirt, and patterned tie is speaking into a microphone. He is gesturing with his left hand. In the background, there are blurred figures of other people and a laptop screen.

“We are investing in autonomous systems capabilities, gaining valuable experience with unmanned air vehicles, spacecraft, and maritime surface and undersea systems.”

- Mike Sinnett, Vice President
Product Strategy and Future Airplane Development

Industrial Internet Consortium (IIC)

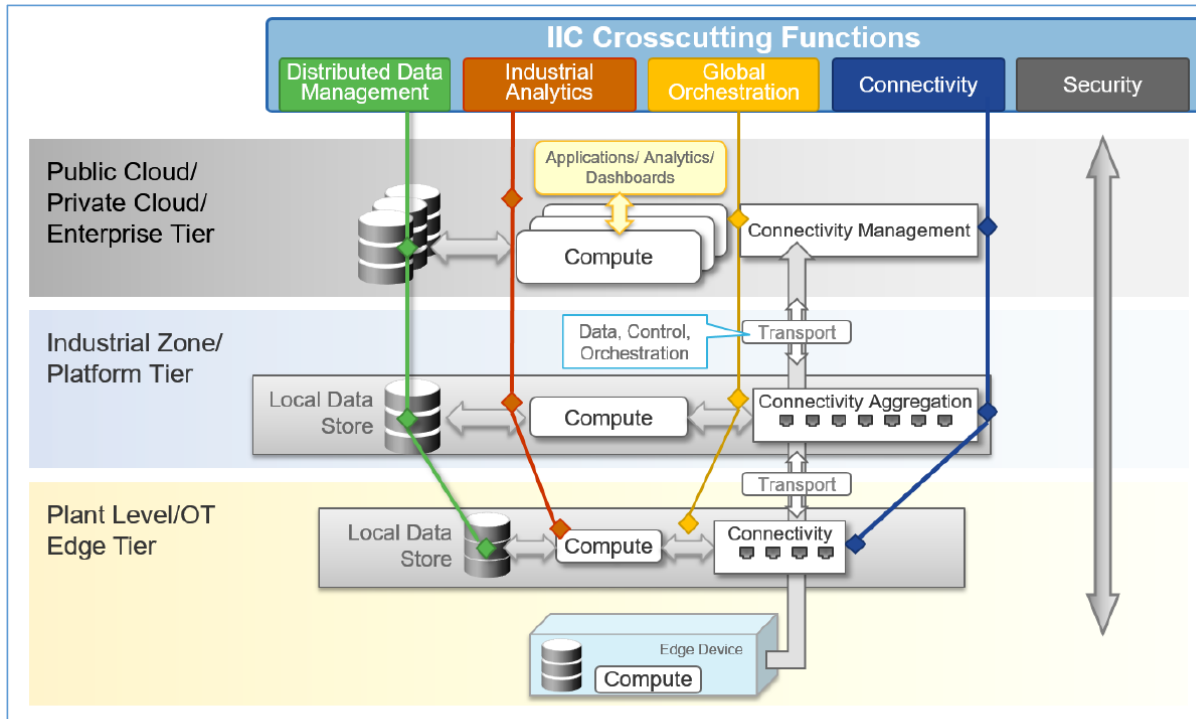


Figure 1: IIC Crosscutting Functions Across Edge Computing Architectures

Edge: “cloud computing systems that perform data processing at the edge of the network, near the source of the data”.

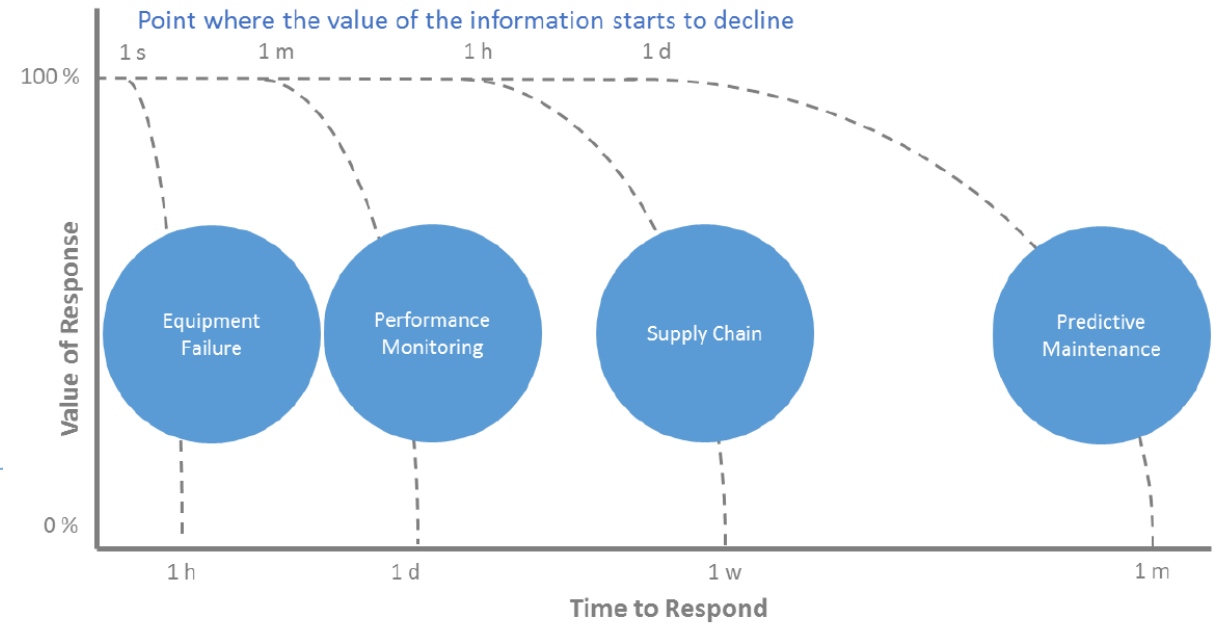


Figure 3: Time-Value curves for Edge information

Advanced Robotics

Mechanic and Machine: Boeing's Advanced Manufacturing Improves 777 Assembly

Advanced manufacturing process has helped build more than 40 777s to date

February 24, 2017 in Our Commitment



Source: <https://depts.washington.edu/barc/news/visit-boeing-ceo%20>

Source: <http://www.boeing.com/company/about-bca/washington/faub-777-production-03-24-17.page>

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Visit from Boeing CEO

Friday, May 11, 2018

UW News



Dennis A. Muilenburg (president, chair, and chief executive officer of The Boeing Company) visited BARC and UW. Photo with students, faculty, staff at UW and Boeing affiliates

Boeing Additive Manufacturing (BAM)



A bed of additive-manufactured titanium components for the Boeing 787 Dreamliner. Photo via Norsk Titanium.

“3D printing has the ability to transform manufacturing in one of the most significant ways in our history. I think this is a real game-changer.” - Boeing VP & GM Kim Smith

Source: <https://www.manufacturingleadershipcouncil.com/2018/05/03/boeings-additive-ambition/>

Source: <https://3dprintingindustry.com/news/3d-printing-news-sliced-boeing-renishaw-norsk-titanium-digital-metal-127889/>

Source: <https://www.boeing.com/company/about-bca/washington/stem-engineers-week-02-21-19.page>

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Boeing engineers inspire future STEM leaders during Engineers Week

"I think Boeing really cares about the future"

February 21, 2019 in Our Community



Since Morf3D was established in late 2015, the company has produced 3D-printed titanium and aluminum components for Boeing satellites and helicopters. With this investment, Morf3D will collaborate with Boeing to further develop manufacturing processes and engineering capabilities.

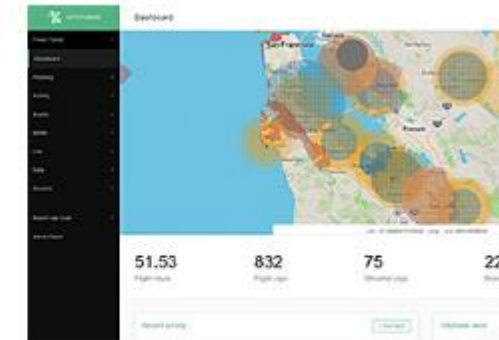
Horizon X

Boeing HorizonX

“By taking a holistic approach that combines Boeing’s strength in technological innovation with new business models and non-traditional partnerships, we are laying the foundation for the future commercial **mobility ecosystem**,” said Steve Nordlund, who will lead Boeing NeXt in addition to serving as vice president of HorizonX.



Boeing HorizonX Ventures Invests in On-Demand Urban Aerial Delivery Startup Matternet



Boeing HorizonX Ventures Invests in Unmanned Aircraft Systems Software Startup Kittyhawk



Boeing HorizonX Invests in Unmanned Systems Technology Leader Near Earth Autonomy



Boeing Unveils New Unmanned Cargo Air Vehicle Prototype

Boeing HorizonX Invests in Zunum Aero



Source: <https://www.geekwire.com/2018/whats-next-boeing-will-work-ai-blockchain-drone-traffic-system/>

Source: <https://www.boeing.com/features/2019/02/aerion-partnership-02-04-19.page>

Source: <http://www.boeing.com/company/key-orgs/horizon-x/#/news>

Autonomous Passenger Air Vehicle (PAV)



Source: <https://www.boeing.com/features/2019/01/pav-first-flight-01-19.page>

Source: https://www.eetimes.com/document.asp?doc_id=1334403

Source: <https://www.aurora.aero/pav-evtol-passenger-air-vehicle/>

BOEING ~~NEXT~~

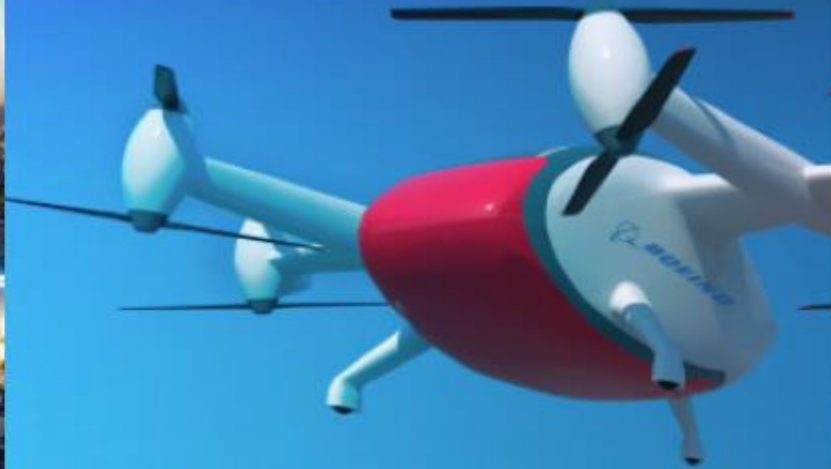
CREATING A SECURE AIRSPACE

autonomous and piloted
air vehicles to safely
coexist



MOVING GOODS AND CARGO

transforming the future
of autonomous mobility



GIVING PEOPLE MORE TIME

seamless point-to-point transport



SparkCognition & Matternet



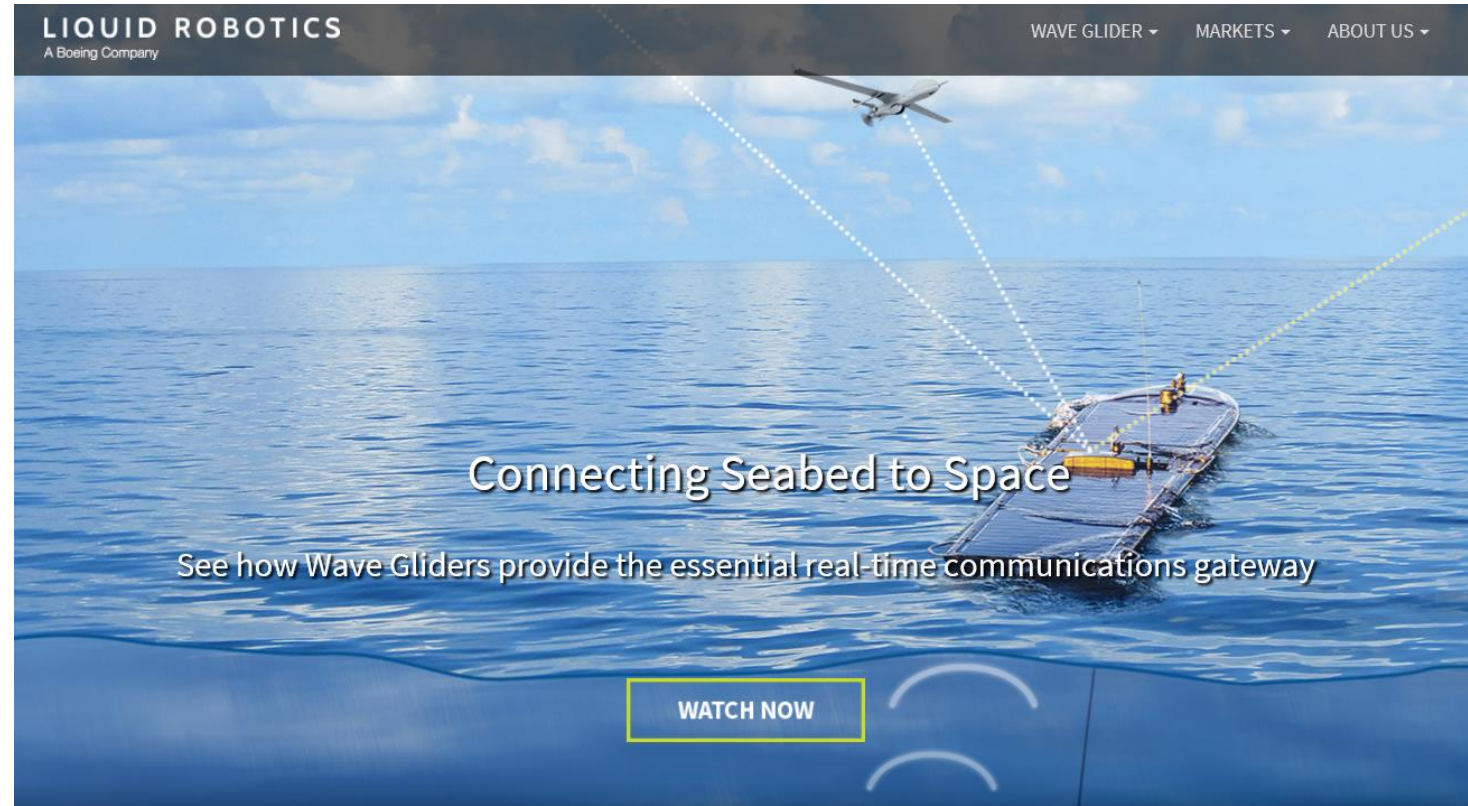
Boeing — the world's largest aerospace company — is teaming up with AI-firm SparkCognition to launch **SkyGrid** — a new startup focusing on urban aerial mobility.

Source: <https://dronelife.com/2018/11/26/boeing-teams-up-with-startup-to-spawn-drone-logistics-system/>

Source: <https://boeing.mediaroom.com/2018-06-26-Boeing-HorizonX-Ventures-Invests-in-On-Demand-Urban-Aerial-Delivery-Startup-Matternet>

Source: <https://www.forbes.com/sites/marisagarcia/2018/07/17/boeing-partners-with-sparkcognition-to-develop-ai-solutions-for-future-of-air-transport/#16bed6655df4>

Liquid Robotics



Wave Gliders provide a platform for gathering data over longer durations for a fraction of the cost of ships. Using fleets of Wave Gliders to better understand the health of our fisheries, could have a massive economic impact.”



BOEING AEROSPACE & AUTONOMY CENTER

Shaping the future of mobility





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JOIN THE CHALLENGE



READY. SET. GOFLY.

The sky is no longer the limit.

JOIN THE CHALLENGE



Opportunities

- Massive Data
- Connectivity
- Architecture
- Global Reach
- Emerging Technology

