



# Towards Autonomous Industries ROS++

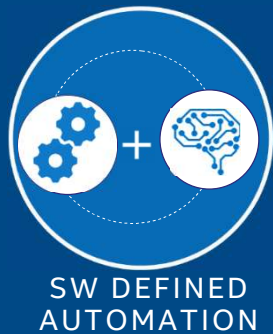
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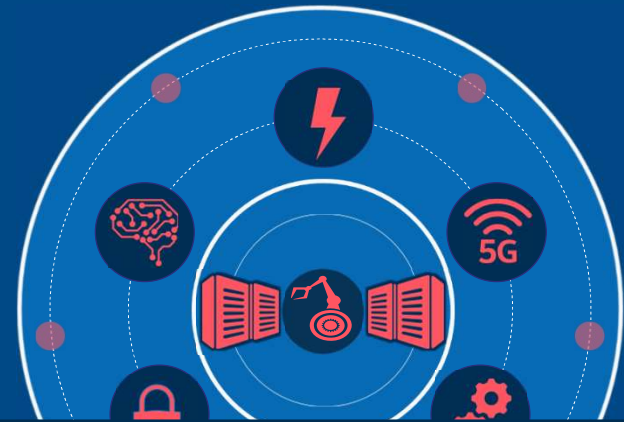
# Automation → Autonomy

Autonomy: correct operations over a long duration, without human supervision, while tackling expected and unexpected situations



**Spot Known Defects**  
"This Looks Bad"

**Discover Anomalies**  
"This Doesn't Look Good"



**Predict & Prevent Defects**  
"Always Good Parts"

# Building Blocks for Autonomous Industry



CONNECTIVITY



AI



AUTONOMOUS  
FACTORIES



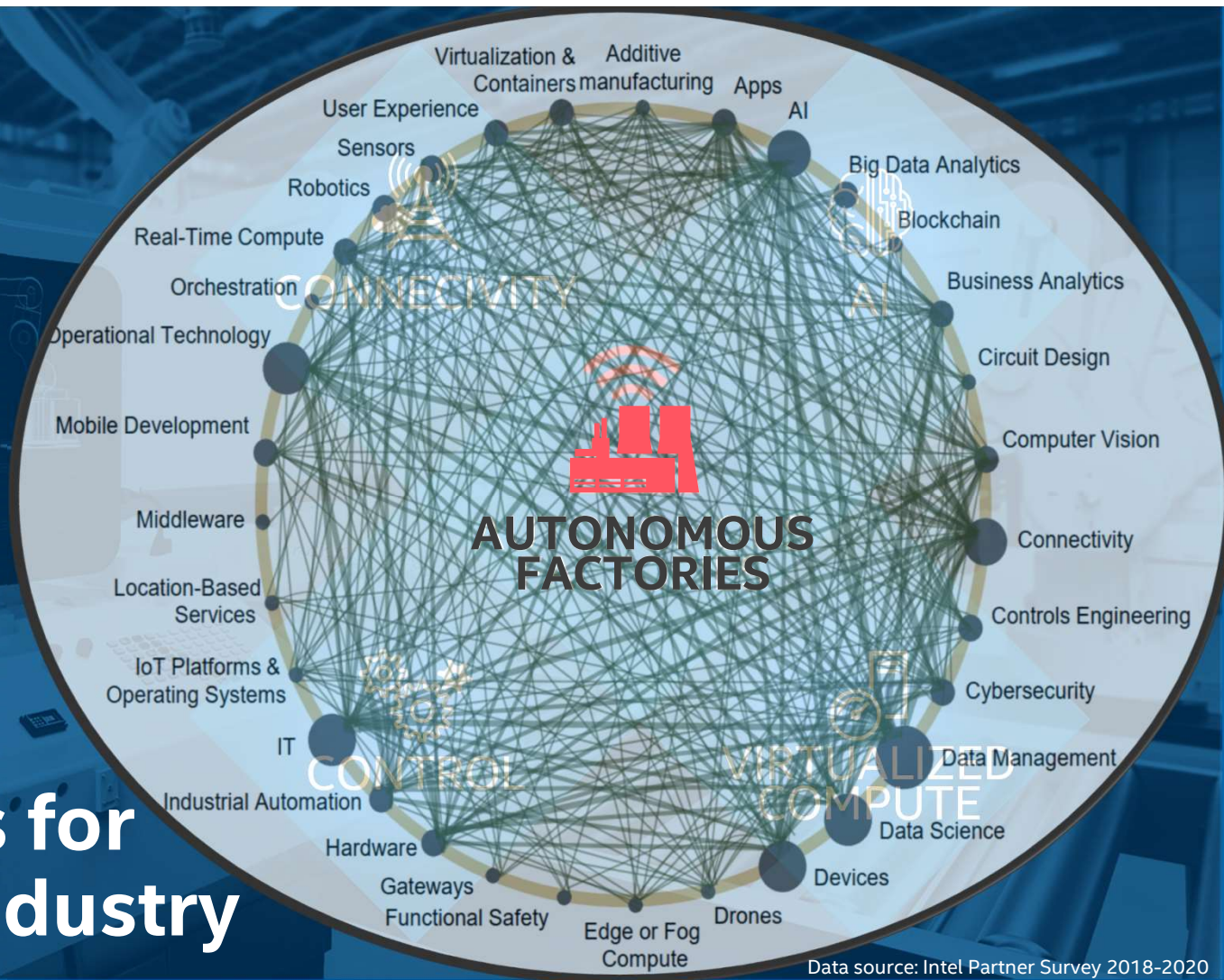
CONTROL



VIRTUALIZED  
COMPUTE

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# Building Blocks for Autonomous Industry



# Dreaming Beyond ROS

What can be done to bring ROS-like value to ALL aspects of industrial autonomy?

## ROS Today

- ✓ Modularity
- ✓ Abstraction
- ✓ Connectivity
- ✓ Open source

Direct or Catalytic Influence on Robotics Domain

## Work in progress

- Safety concepts
- Bridges to other middleware
- Optimizations
- Better algorithms

## ROS++ for Industrial Autonomy

- Active bridges to “other” equipment
- Active bridges to IT systems
- Constructs for physical collaborations
  
- Autonomy Specific Lingo and APIs
- Enhanced vocabulary and ontologies
- Non-programmer UX for deployment
  
- Robustness to non-ideal channels
- Amenable to orchestration of functions
- Security, Encryption: data, topics, media
- Constructs f/ multi-modal sensor fusion
- On-device persistence of data

The Intel logo is centered on a dark blue square background. It consists of the word "intel" in a white, lowercase, sans-serif font, followed by a registered trademark symbol (®). A small blue square is positioned above the letter 'i'.

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