

# Transitioning Robots From Design to Production



**Andy McMillan**

Chair, Cirtronics Advisory Board

*Moderator*

**Youssef Saleh**

Co-Founder and CEO, AVA Robotics

**David Askey**

Co-Founder and CEO, Ascend Robotics

**Matt Liba**

Sr Director of Programs,  
FLIR Unmanned Ground Systems



**CIRTRONICS**  
*An Employee Owned Corporation*



- Entrepreneur and Business Leader
  - CEO Ava Robotics
  - SVP/GM Remote Telepresence Unit, iRobot
  - SVP/GM Telepresence, Polycom
- New Product and New Business Expertise
  - Visionary leadership
  - Product innovation
  - High-growth market building
  - Cross-functional team development
- BSEE/CS, Northeastern University





## AVA ROBOTICS

- Intelligent, self-navigating mobile platforms
- Autonomous mobility
- Human coexistence
- Enterprise, commercial and industrial applications
- Remote presence



- Extensive experience in
  - Machine learning
  - Object tracking
  - Image-based modeling
  - 3D vision
- Strong product strategy and direction background
  - Multiple companies
  - Multiple robots
- US and European Experience
- BSEE and MSEE from MIT





## Autonomous kitting to fit your infrastructure



### Autonomous Workflow

Let our robots take care of kitting so your employees can focus on higher-value work.



### Secure & Traceable Handling

Our robots learn your inventory to safely pick parts with speed and accuracy.



### Precise & Flexible Kitting

With advanced perception and AI, our robots precisely arrange, sort, and kit parts.



### Safe, Adaptive Systems

As a labor multiplier, our systems work easily with your workforce to enhance demand responsiveness.



- Experienced with Military Systems Development
  - FLIR Unmanned Ground Systems (formerly Endeavor Robotics)
  - BAE Systems, Electronics Solutions
  - First Look, PackBot and Kobra robots
  - Threat Warning and Countermeasures
- Strong Program and Product Management
  - Product vision
  - Capability development
  - Cost, Quality and Lifecycle Management
- BSME, Connell and MBA, Boston College





## FLIR Unmanned Ground Systems (formerly Endeavor Robotics)

- World's leading provider of battle-tested Unmanned Ground Vehicles (UGVs) used for bomb disposal, surveillance, detection, hazmat situations, and more
- Serving U.S. and international military, law enforcement, and industrial users
- Five major robot platforms, ranging in size from five to 500 pounds
- 7,000+ robots delivered to more than 55 countries
- Over 120 employees; offices based in Chelmsford, Mass.
- Originally part of iRobot (1990s)



# Andy McMillan, Chair, Cirtronics Advisory Board

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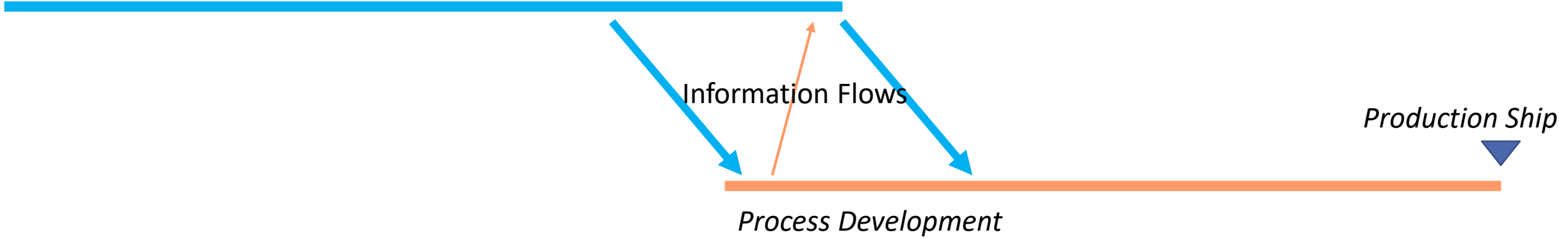
- 20+ years in embedded electronics and software product development
- Instituted DFA, DFM and cross-functional development teams
- Designed and implemented in-house NPI process
- Initiated concurrent development methodology
- Roles in design, engineering management, product management, CEO
- BSEE, MBA University of Michigan





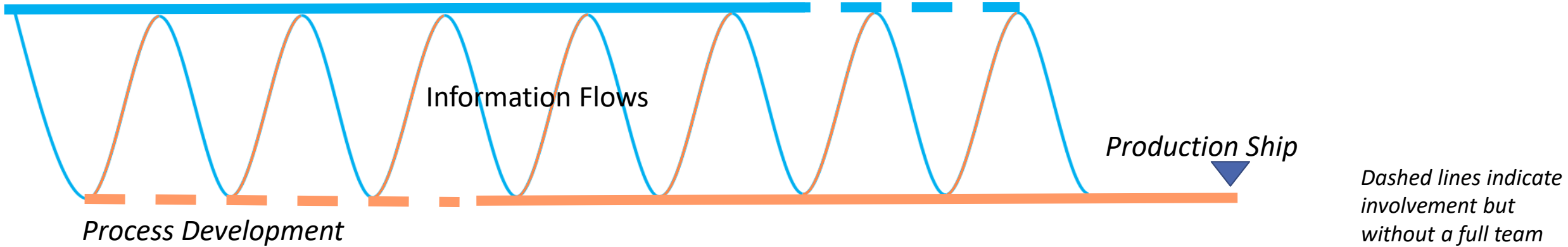
# Traditional Engineering

*Product Development*



# Concurrent Engineering

*Product Development*



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