

# Preparing for the Technology Enabled Future of Aviation



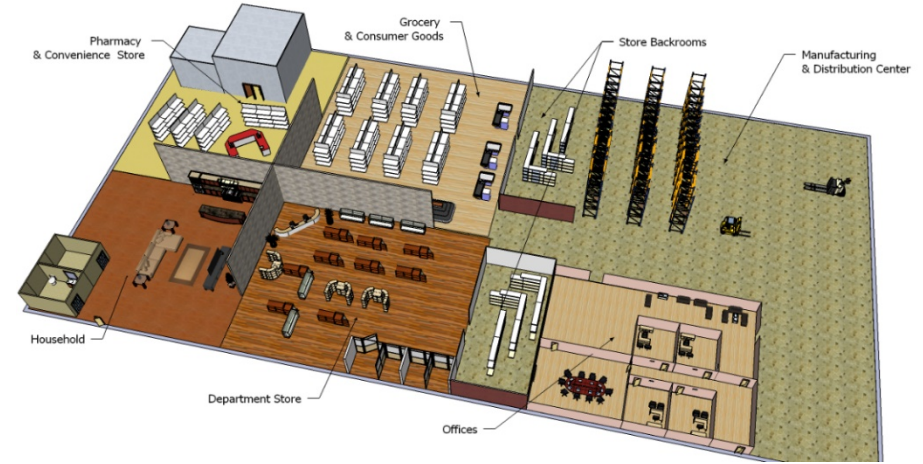
# Topics for today

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- RFID Lab? Who are you?
- RFID in aviation – State of the industry
- Future of aviation
- Preparing for the technology enabled future of aviation

# RFID Lab @ Auburn University

- Focus on business case and value
- Established 2005 at University of Arkansas
  - ▣ Moved to Auburn University in 2014



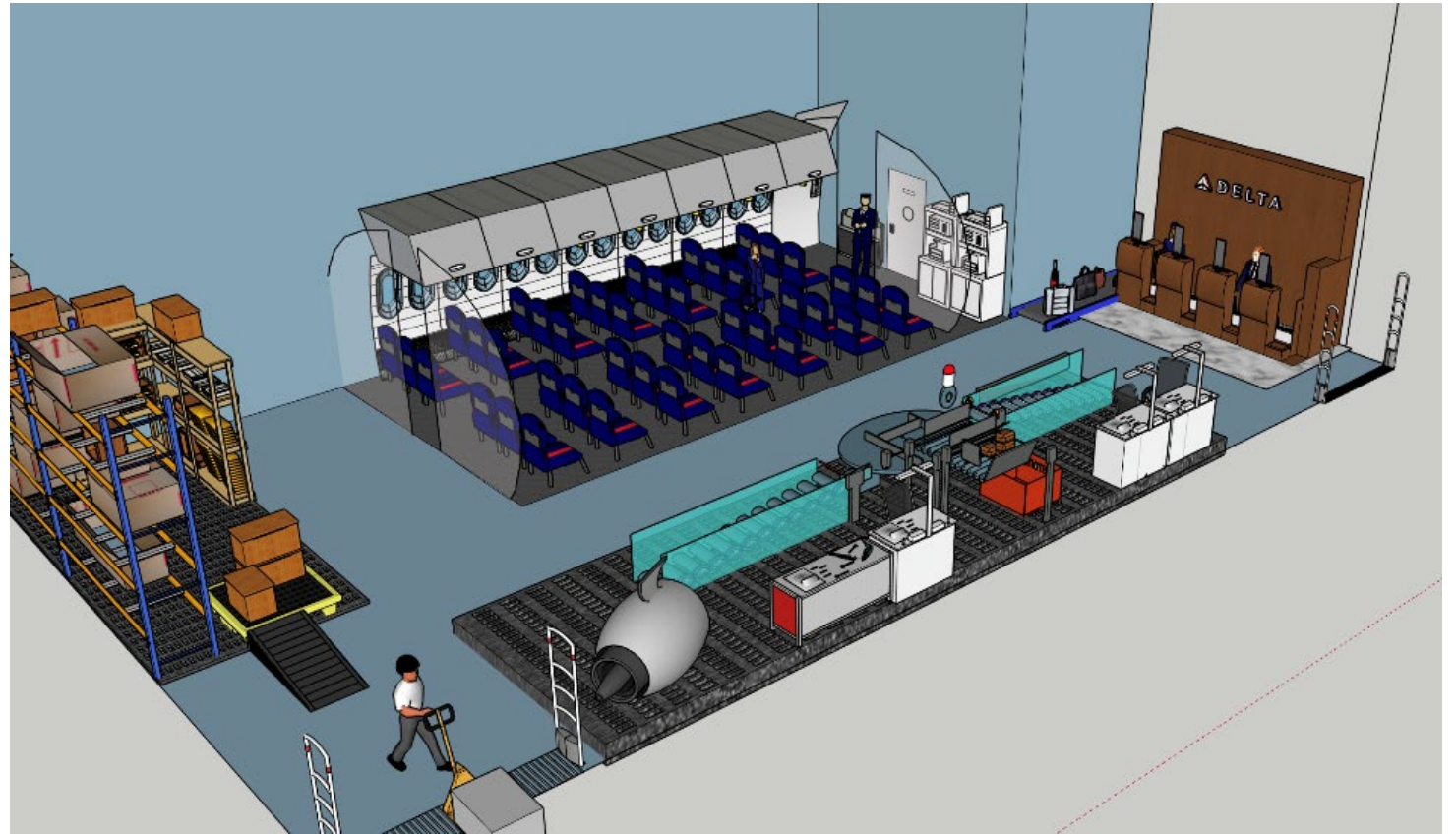
# Our role

- Education
- Research
- Support

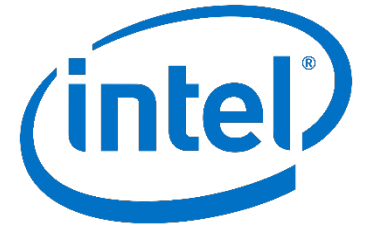


# Focus Areas

- Retail
- Aviation







# Strategic Investments from Aviation

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# Current Projects

- Industry education and support
- Business case and best practices
- Spec2000 Data Conformance Program
- Tag Quality and Performance





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# RFID in aviation

1. Flyable parts
2. Baggage/Cargo
3. Logistics
4. Workflow management in Factory/MRO
5. Asset tracking



# Flyable Parts

- Eri Hokura @ Delta
- Chad Moran @ United



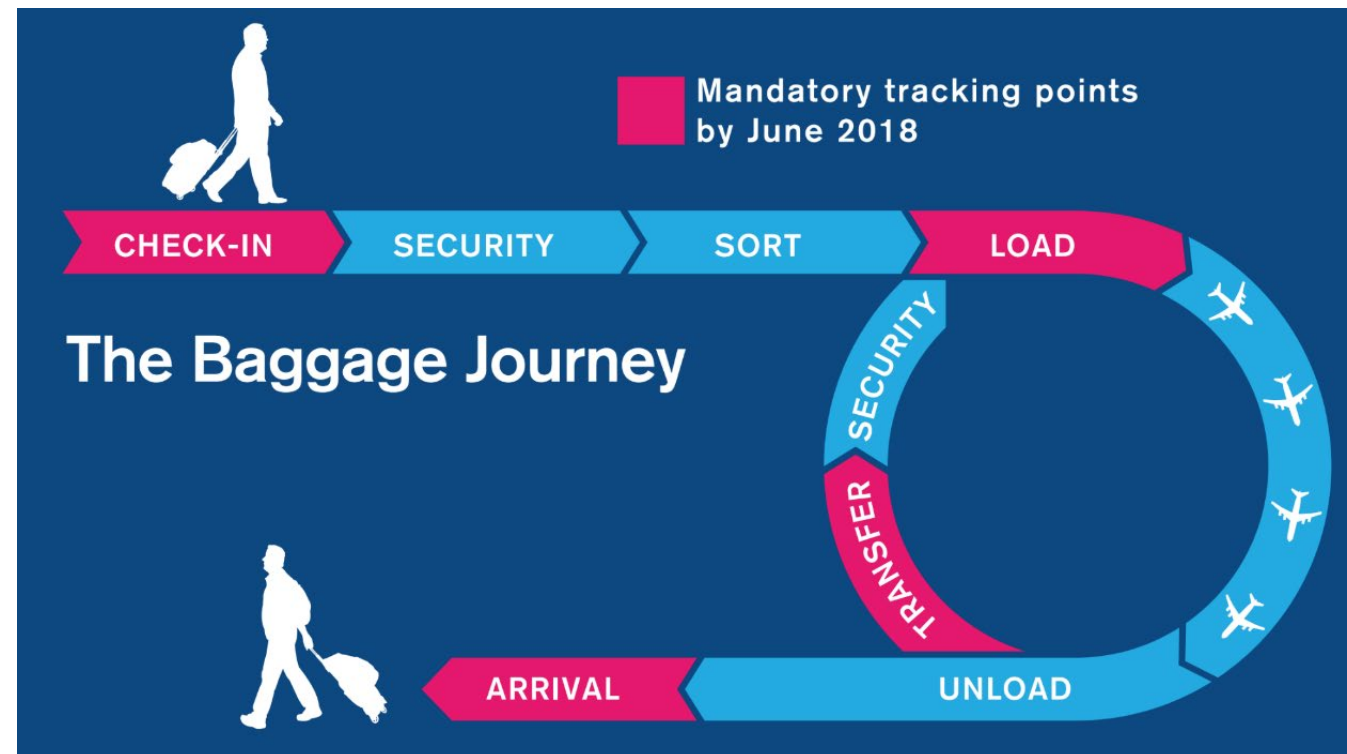
# Baggage so far...

- Delta - All bag tags since 2017
- Las Vegas, Newark, Hong Kong – Chose RFID over barcode when selecting a new system
- A lot of pilot and trials happening



# IATA Resolution 753

- All bags must be tracked and shared at 4 key points
  - ▣ Passenger handover to airline
  - ▣ Loading to aircraft
  - ▣ Deliver to transfer area
  - ▣ Return to the passenger
- RFID, Barcode, Pen/Paper



# RFID tags

June 2018

IATA board of governors vote to mandate RFID in all baggage tags by 2020





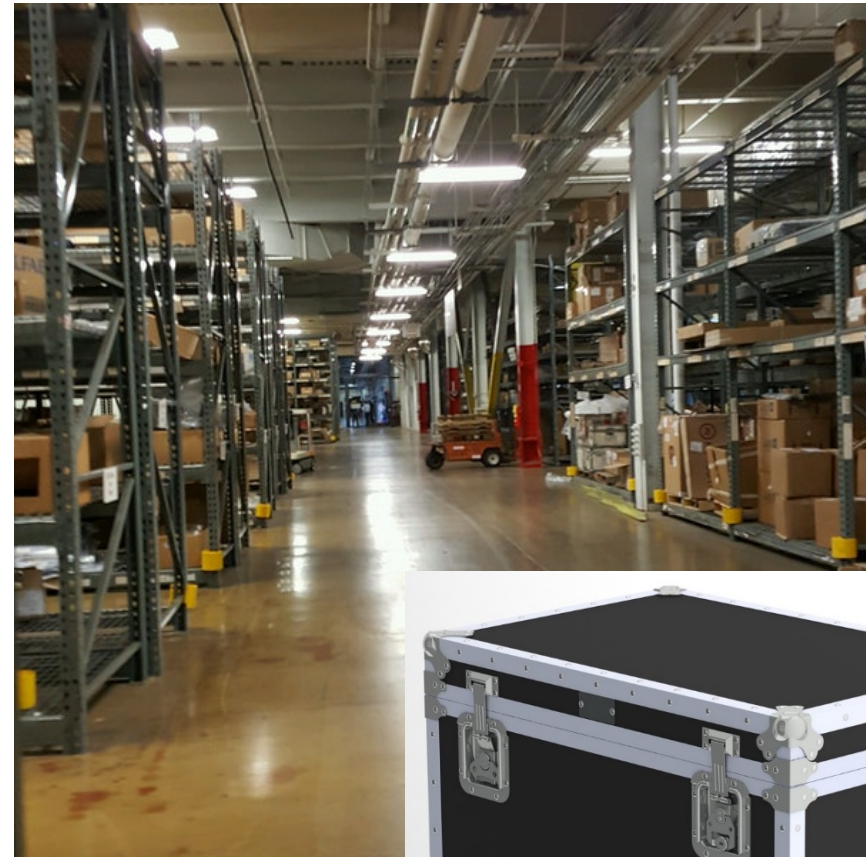
# Bag tags

- What has been done so far?
  - ▣ Data standards
  - ▣ Published performance & quality requirements
  - ▣ Option to use non-encoded tags
    - Scan-Scan
    - No need to upgrade printers
  - ▣ Luggage manufacturers integrating tags



# Logistics

- Accurate Inventory
  - ▣ Warehouse
  - ▣ Line stations
- Tracking
  - ▣ Distribution
  - ▣ Logistical operations
- Locate inventory
- Inbound audit
- Outbound audit





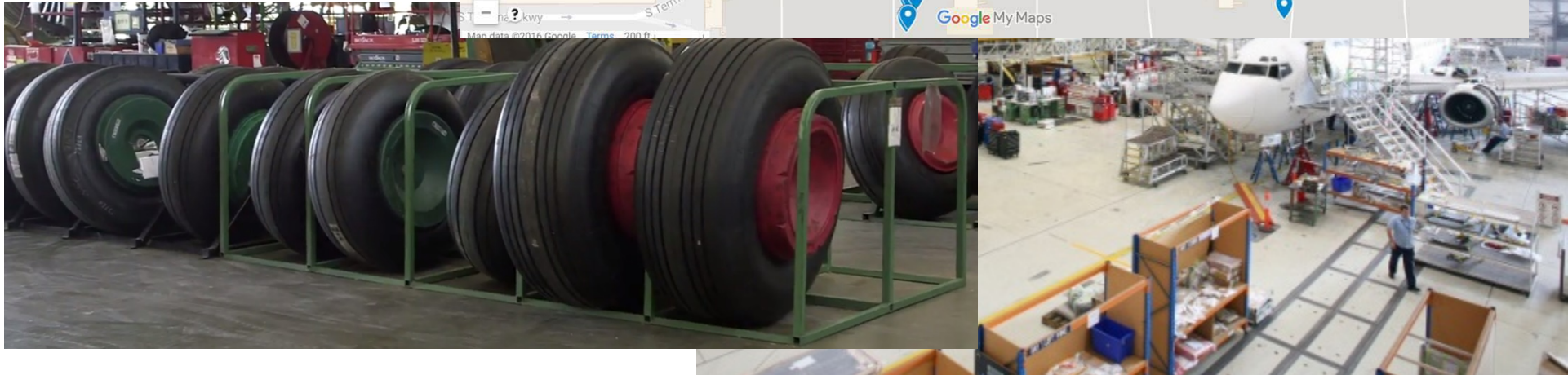
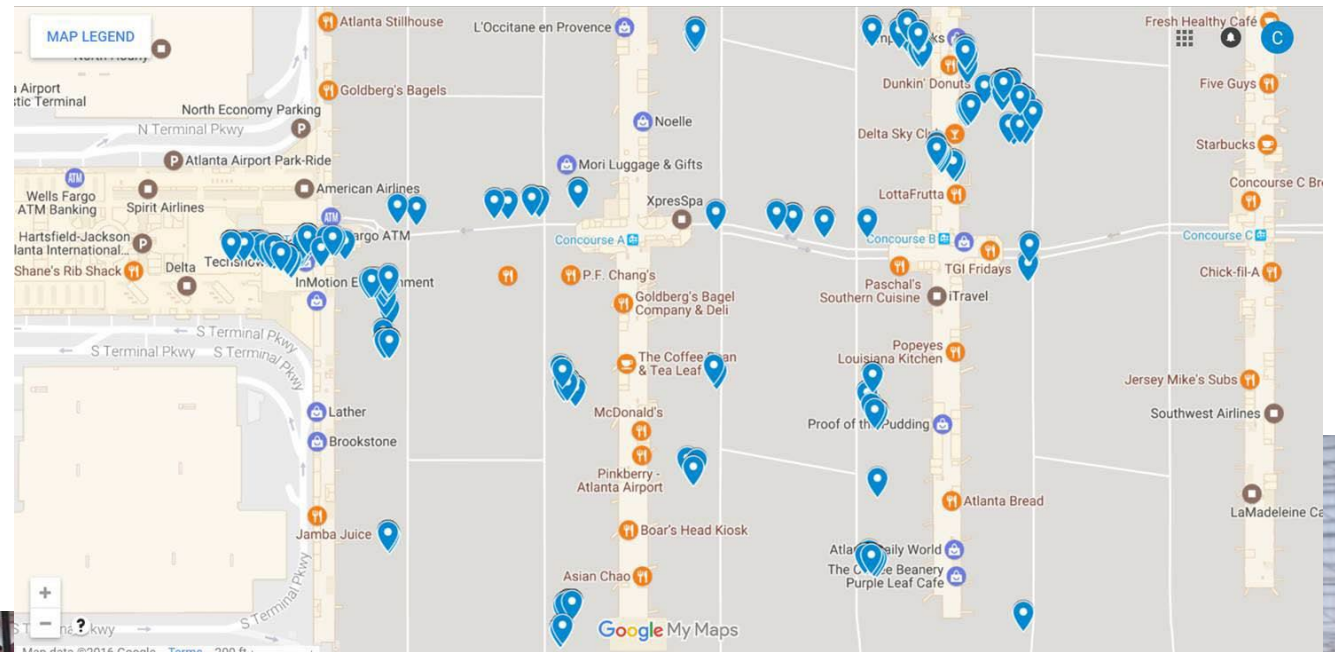
# Workflow management in Factory/MRO





# Asset tracking

- GSE
- Hangar equipment
- Tools
- Etc...



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# Airlines – Who is your competitor?



We have a new generation who prefers  
texting across the room



# Future of aviation...

1. Consumer experience, we need to make flying cool again.
  2. Drive efficiency, reduce cost
  3. Happy employees
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- Bring aviation to the 21<sup>st</sup> century
    - ▣ Technology is a tool to get there



# Digitalization

## Data Capture



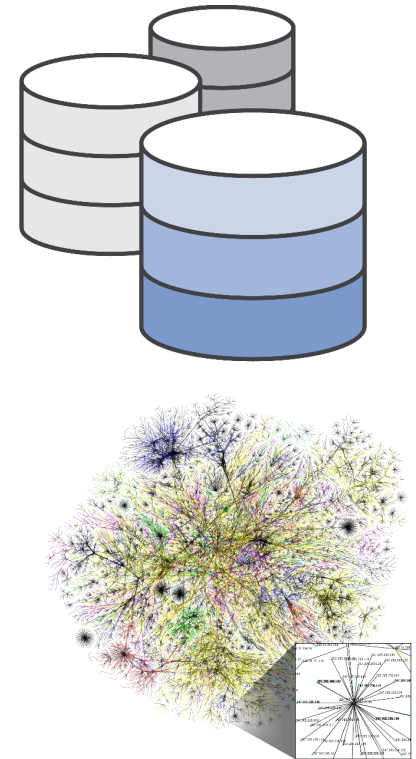
Visibility into what is  
happening

## Data Analysis



Insights from data that  
drives decision

## Data Sharing



Efficiency and Scale

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# Characteristics of New Technology



1. No single technology is going to solve all your problems
2. Transformation takes time, be patient.
3. Execution matters

# New trend every year

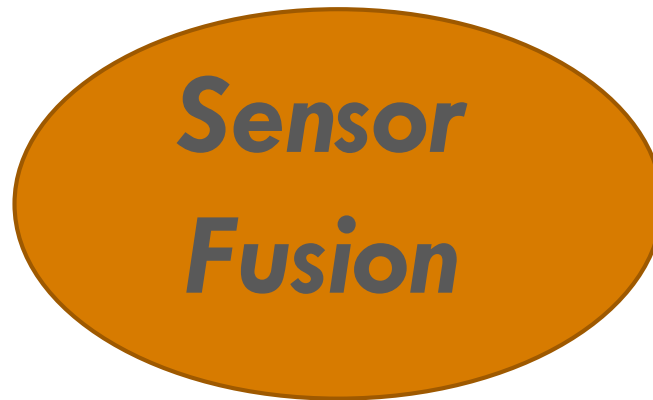
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- 2013 – Cloud is going to solve everything
- 2014 – Big data is going to solve everything
- 2015 – RFID is going to solve everything
- 2016 – Augmented reality is going to solve everything
- 2017 – Blockchain is going to solve everything
- 2018 – AI is going to solve everything
- 2019 – ? is going to solve everything

# It is going to be a team effort



Barcodes



RFID



Computer vision



Handheld Computers

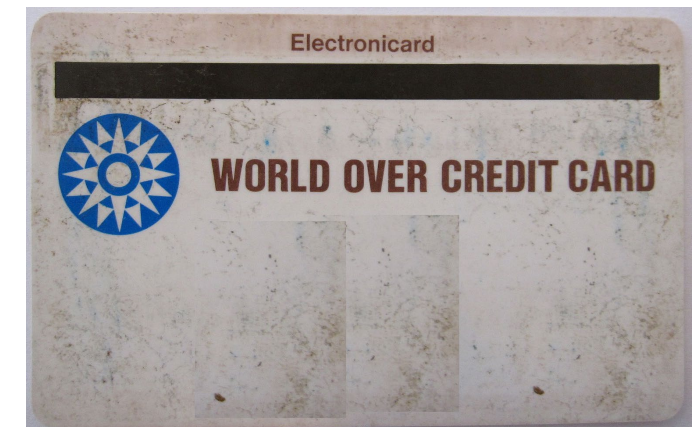
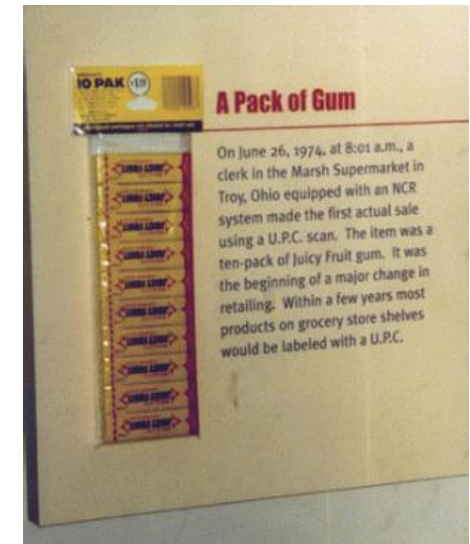


Robots/Drones



# Transformation takes time

- Speed of adoption?
  - Barcode: 20 years to critical mass
  - Credit cards: 30 years to critical mass
- RFID: 10 years
  - 16 billion tags in 2018; 20% of retail items
  - Great momentum in aviation



# Transformation takes time

- Delta's RFID program
  - ▣ 10 years
- United's RFID program
  - ▣ 5 years



# Execution

- How well do you do the above?
  - ▣ Competence
  - ▣ Process
  - ▣ People
  - ▣ Change management



# Thank you!

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