



# Seaport Global Annual Transports & Industrials Conference



Nasdaq: ATRO

ELEVATING *innovation*

**Peter J. Gundermann**, President & CEO

**David C. Burney**, Executive Vice President & CFO

March 21, 2019

[astronics.com](http://astronics.com)

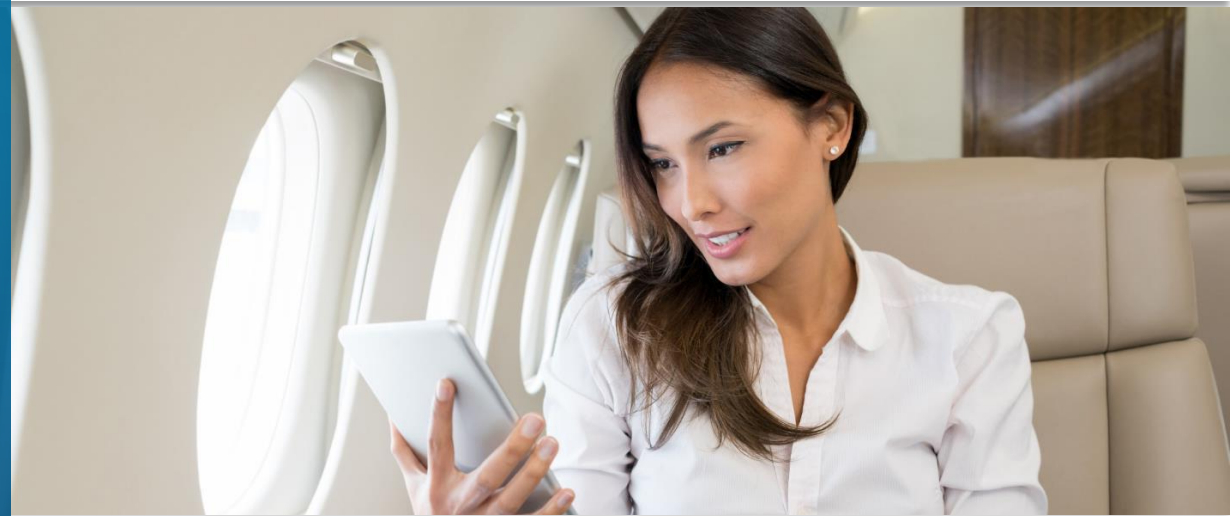
# Safe Harbor Statement

These slides (and the accompanying oral discussion) contain forward-looking statements as defined by the Securities Exchange Act of 1934. Such statements involve known and unknown risks, uncertainties, and other factors that could cause actual results of the Company to differ materially from those contemplated by the statements. Important factors that could cause actual results to differ materially from what may be stated here include the progress being made with the three operations having losses, the continuation of the trend in growth with passenger power and connectivity on airplanes, the ability of the company to advance its Test business, the ability to achieve at or near breakeven performance in the Test business, the Company's ability to deliver a solid 2019, the ability to win new projects in the Test business and margins to expand with growth, the success of the Company achieving its sales expectations, the state of the aerospace, defense, and other mission-critical industries, the market acceptance of newly developed products, internal production capabilities, the timing of orders received, the status of customer certification processes and delivery schedules, the demand for and market acceptance of new or existing aircraft which contain the Company's products, the need for new and advanced test and simulation equipment, customer preferences and other factors which are described in filings by Astronics with the Securities and Exchange Commission. The Company assumes no obligation to update forward-looking information in this presentation, or its accompanying oral discussion, whether to reflect changed assumptions, the occurrence of unanticipated events or changes in future operating results, financial conditions or prospects, or otherwise.

# Astronics Corporation (Nasdaq: ATRO)

INNOVATION. COLLABORATION. SUCCESS.

Astronics is a leader in niche applications through collaboration with customers to integrate its array of power, connectivity, lighting, structure, interior, and test technologies to solve complex challenges.



Market Cap	\$1.1 billion
Recent Price	\$32.35
52-Week Range	\$27.56–\$40.59
Average Daily Volume (3 mos.)	138,760

Shares Out	32.6 million
Institutional ownership	66%
Insider ownership	14%
Index membership	Russell 3000 <sup>®</sup> /2000 <sup>®</sup>
Established/IPO	1969/1972

# Resuming Growth in Aerospace

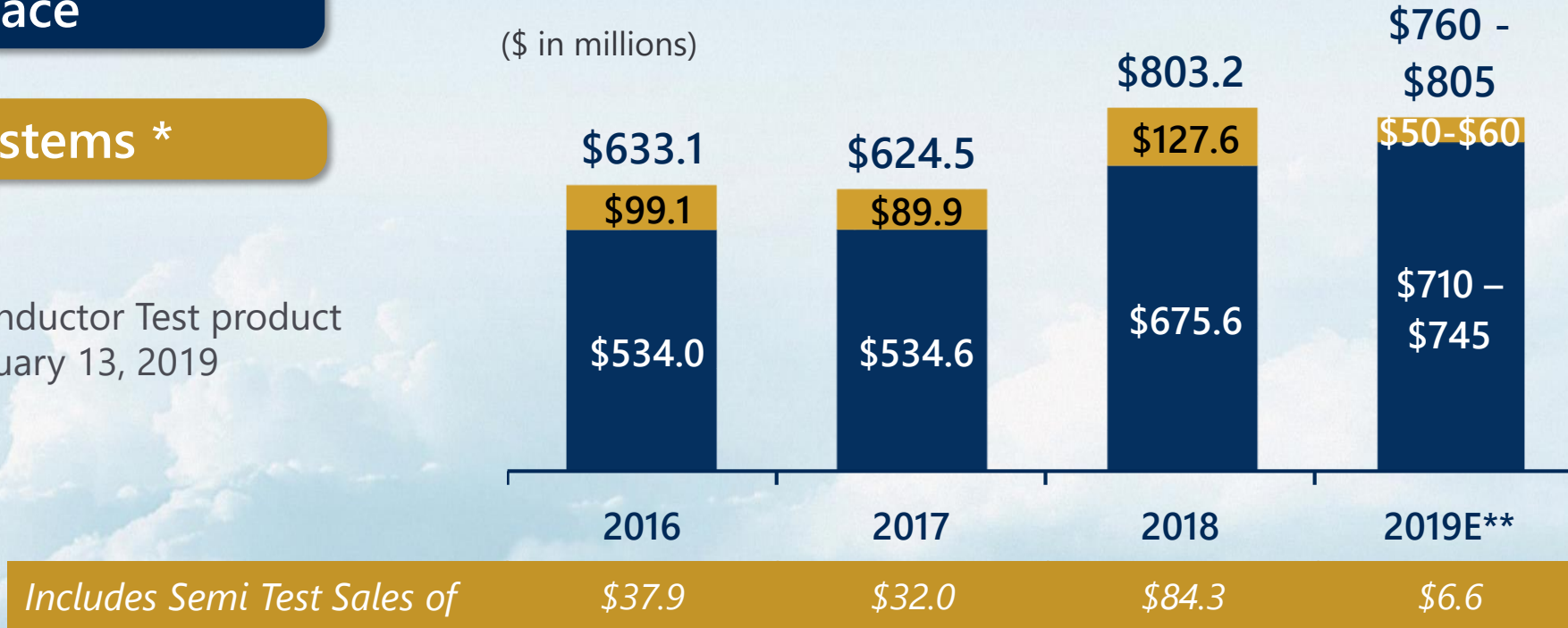
**Aerospace**

**Test Systems \***

\* Sold Semiconductor Test product line on February 13, 2019

## SALES

(\$ in millions)



\*\*Guidance provided February 21, 2019. Segment sales tally may differ due to rounding.

# Astronics Aerospace

Elevating Innovation

## PRODUCT LINES

Electrical Power & Motion

Lighting & Safety

Avionics

Systems Certification

Structures

Other

## POWER & MOTION



## CONNECTIVITY & DATA



## LIGHTING & SAFETY



## MAJOR THRUSTS

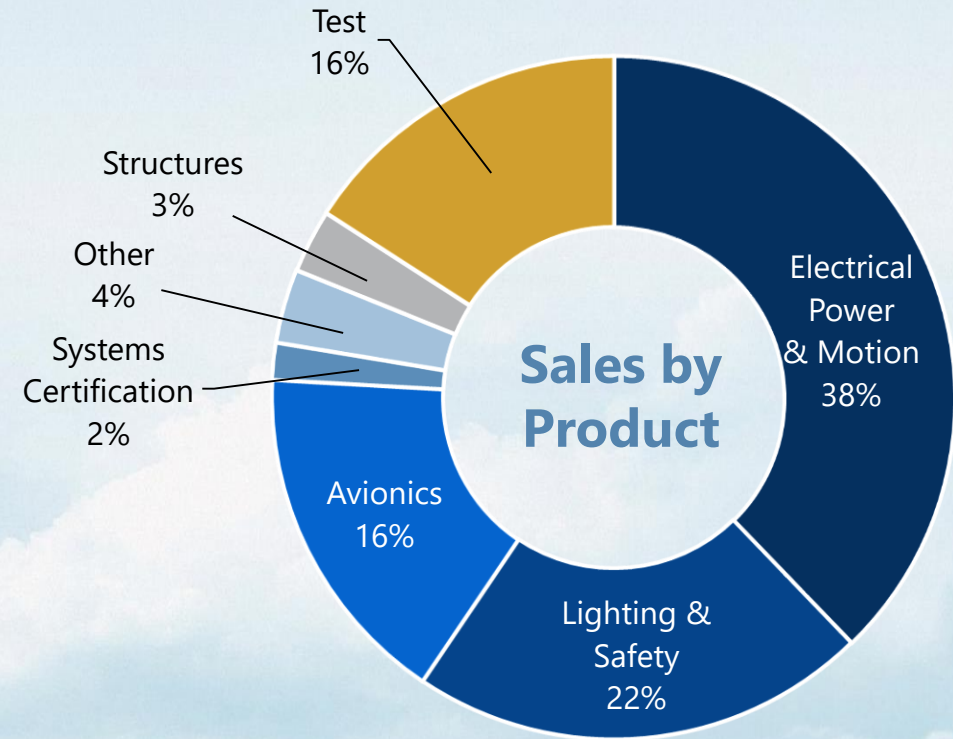
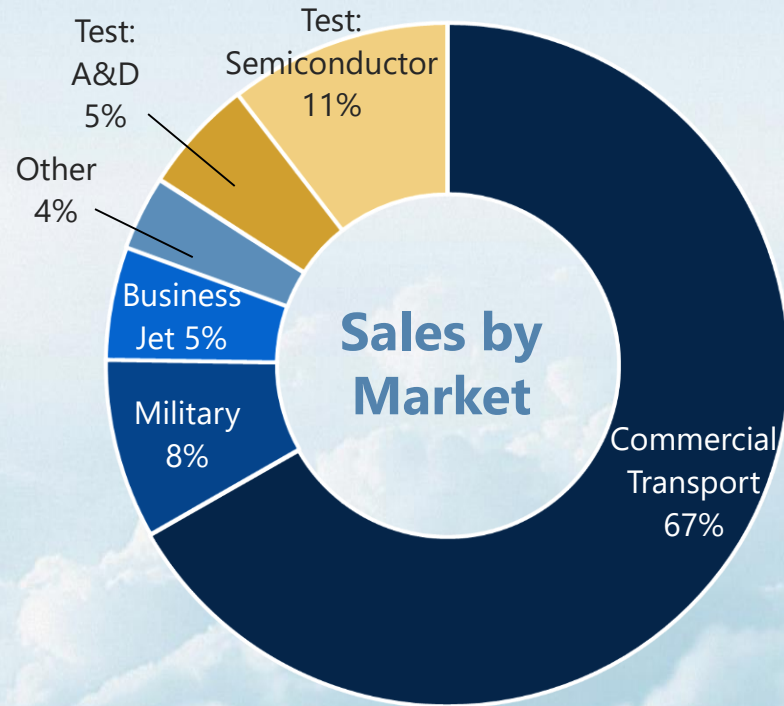
Commercial Aircraft  
Inflight Entertainment &  
Connectivity (IFEC)

Bizjet Connectivity

Aircraft Lighting

Flight Critical Power

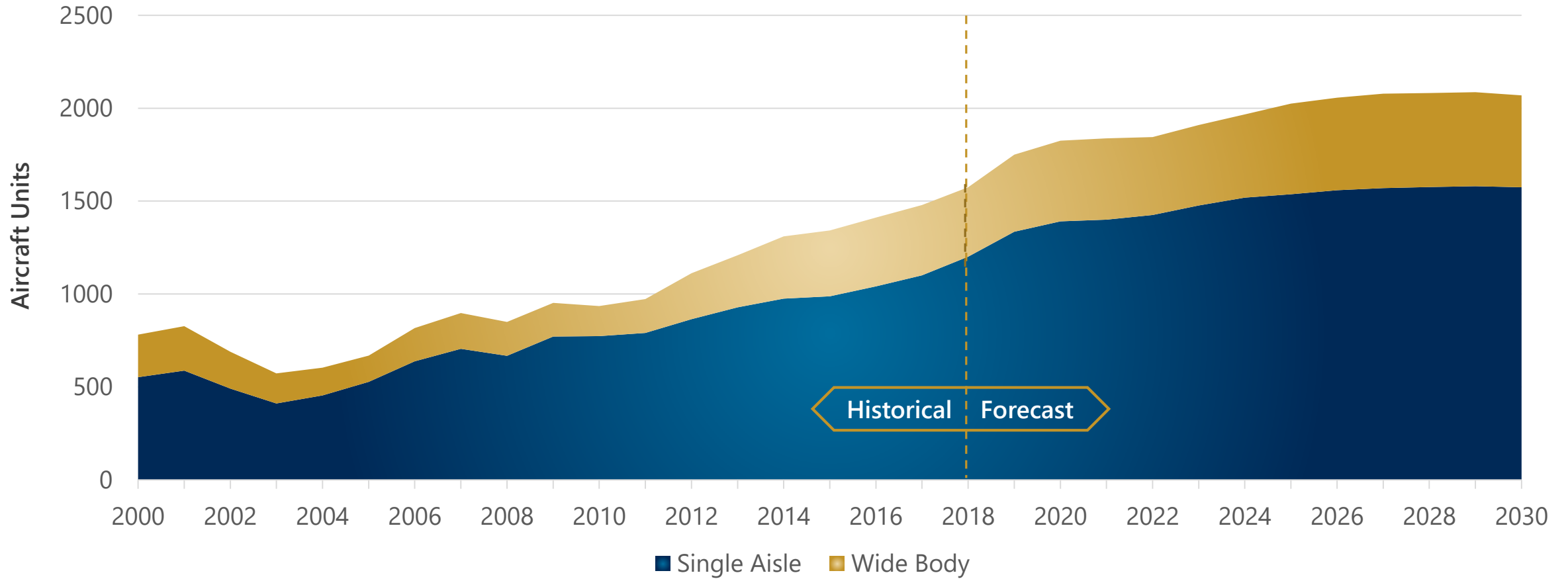
# Sales by Product and Market



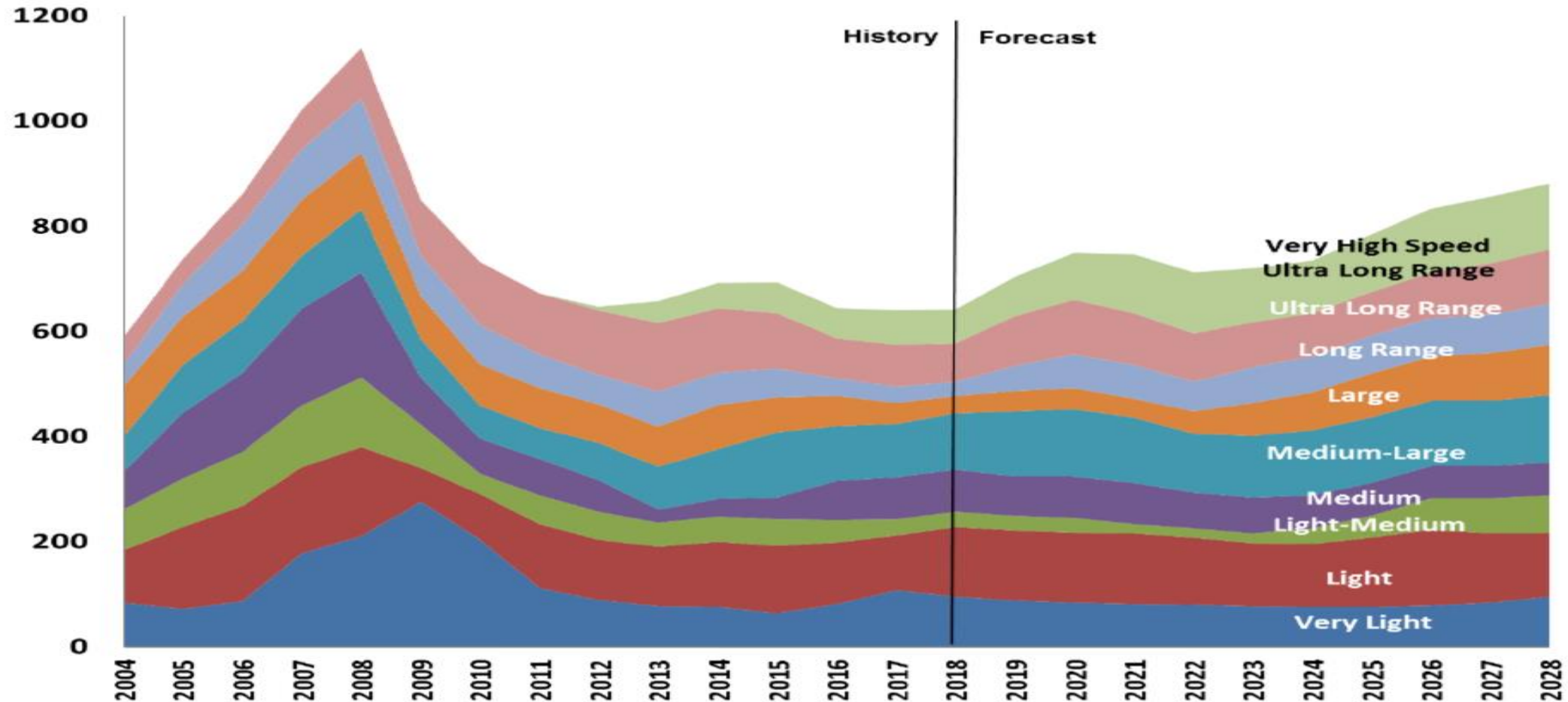
2018 Sales: \$803.3 Million

Sales by product percentage tally may differ due to rounding

# Commercial Transport Delivery Forecast



# Business Jet Delivery Forecast



~7,700 Aircraft from 2019 - 2028



# Commercial Aircraft Inflight Entertainment & Connectivity

Aircraft Data Systems



IFC Antennas and Radome Systems



Power for Passengers and Crew

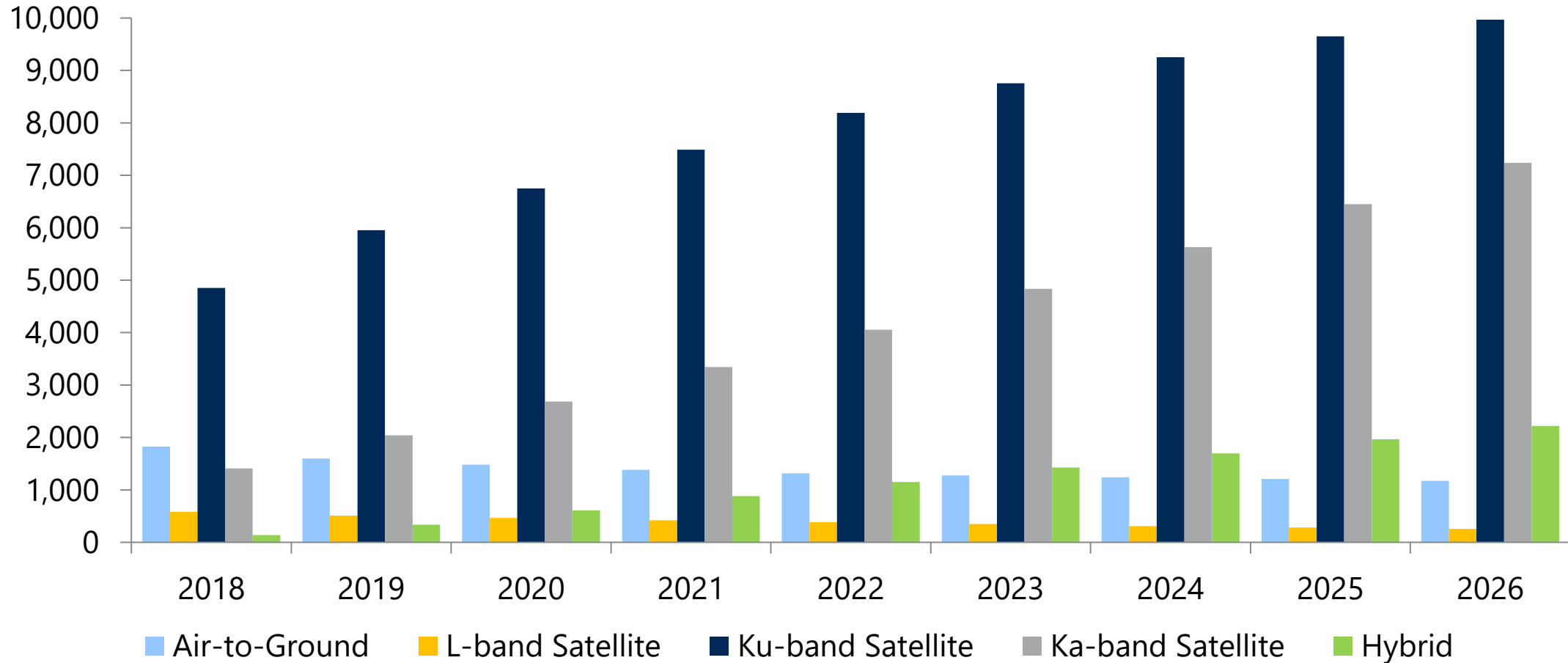


Inflight Entertainment Systems Hardware



# Growing Addressable Market

## Total Connected Aircraft by Frequency Band



# IFEC Technologies & Content Value

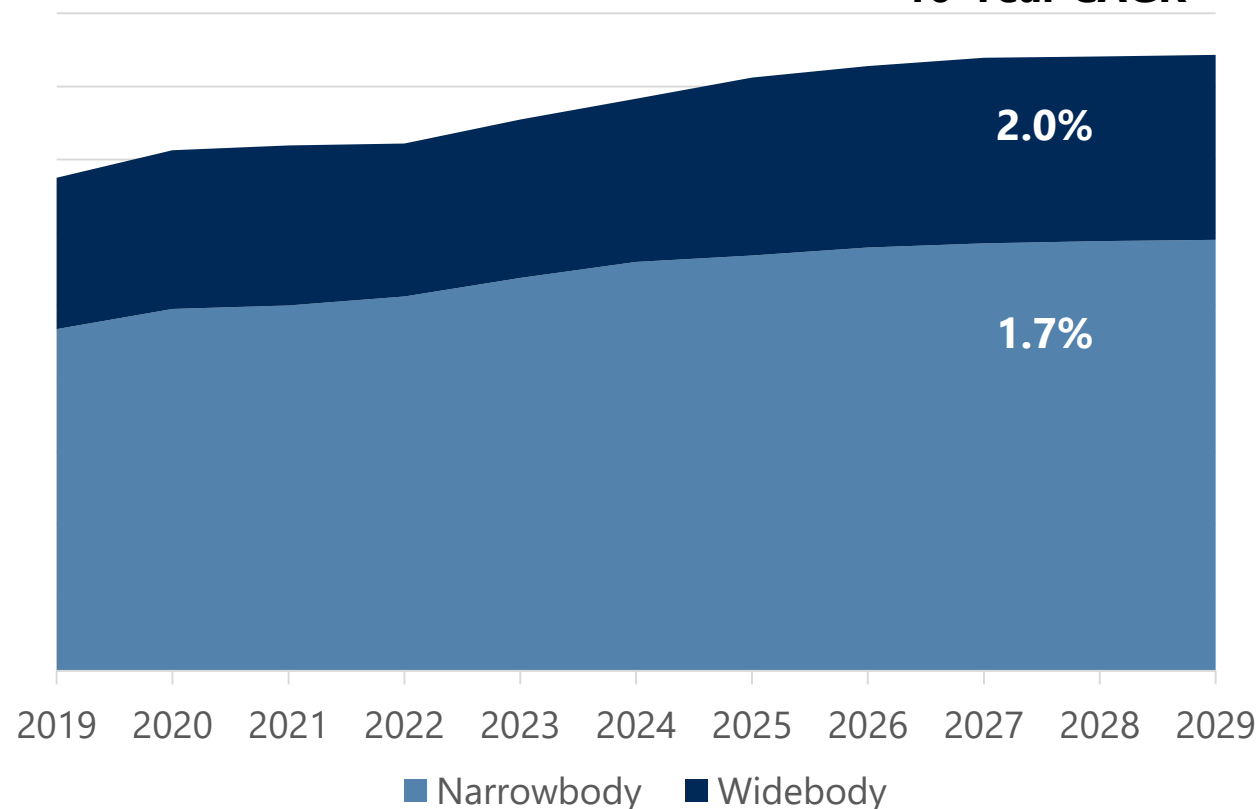
System Components	ATRO	Business	Narrow body Content	Wide body Content
<b>Hardware Equipment</b>				
Antenna System	✓	Aerosat	\$100k-300k	\$300k
Aircraft Interface Device (AID)	✓	Ballard	\$10k	\$10k
Servers	✓	CSC	\$15k	\$15k
Data Loader	✓	CSC	\$5k	\$5k
Wireless Access Points (WAP)	✓	CSC	\$10k	\$15k
In-seat Power	✓	AES	\$50k-\$100k	\$175k - \$300k
Seatback Displays	✓	CCC/PGA		
Passenger Control Units (PCU)	✓	CSC	\$10k	\$20k
<b>Service Delivery</b>				
Content				
Bandwidth				
<b>TOTAL</b>			\$200k - \$450k	\$540k - \$665k

# IFEC Addressable Market: Estimated New Build

## Market opportunity next 10 years

### Aircraft Production

10-Year CAGR



### New Build Market Opportunity

#### Wide body

>5,000 aircraft x \$550k = ~\$3 billion

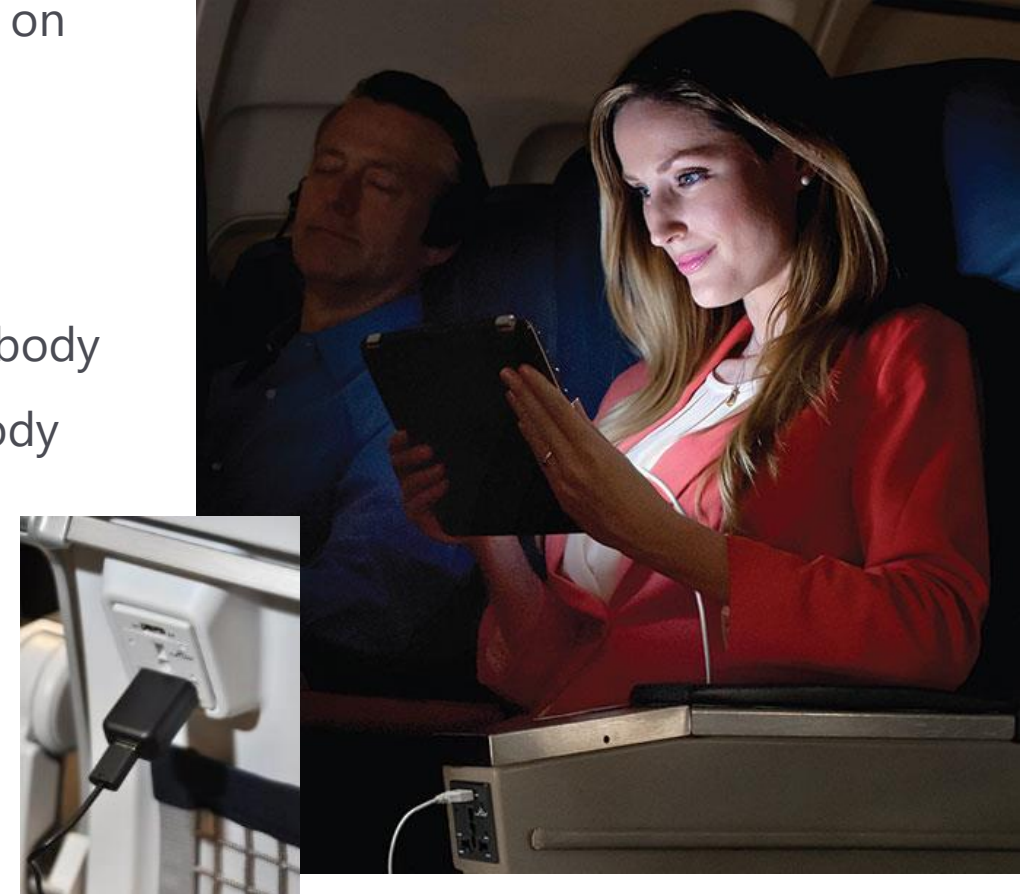
#### Narrow body

>16,000 aircraft x \$250k = ~\$4 billion

# Power and Motion

## In-Seat Power Supply (ISPS)

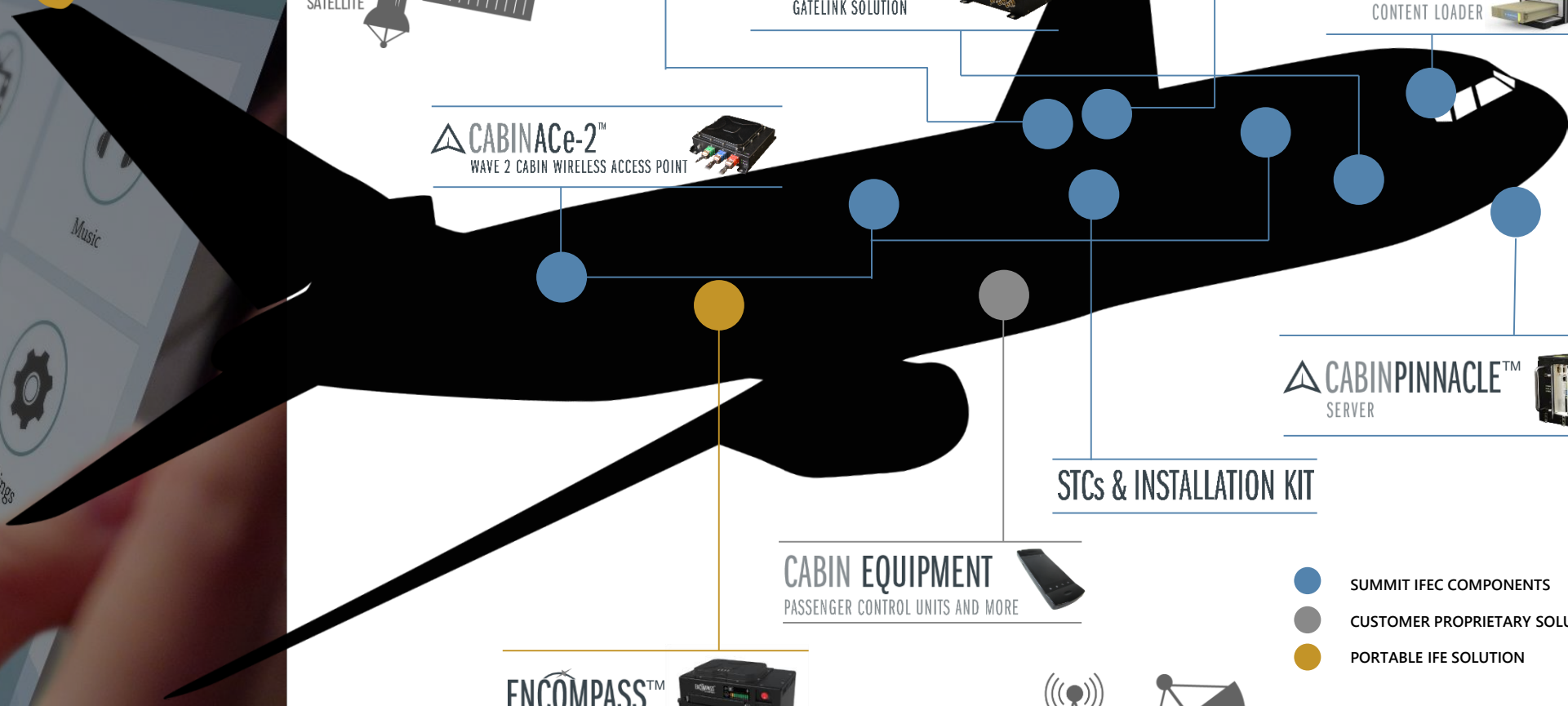
- » In-seat power, line-fit and retrofit, now powering 1 million+ seats on over 240 airlines worldwide
- » High barriers to entry: 90%+ market share
- » ASP: \$350-\$850 per seat
- » Market penetration aircraft: ~80% wide body and ~25% narrow body
- » Market penetration seats: ~60% wide body and ~20% narrow body
- » New build adding over 300,000 seats per year
- » Narrow body aftermarket potential: nearly 2 million seats



ADVANCED  
TECHNOLOGY  
FOR THE  
INTERNET OF

*flight*<sup>™</sup>

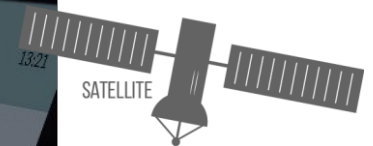
The leader and only one-stop source for the hardware needed to provide connectivity.



ANTENNA



RADOME



SATELLITE

**CABINBRIDGE™**  
GATELINK SOLUTION



**CABINEDGE™**  
CONTENT LOADER



**CABINACE-2™**  
WAVE 2 CABIN WIRELESS ACCESS POINT



**CABINPINNACLE™**  
SERVER



STCs & INSTALLATION KIT

**CABIN EQUIPMENT**  
PASSENGER CONTROL UNITS AND MORE



**ENCOMPASS™**  
ALL-IN-ONE SERVER



- SUMMIT IFEC COMPONENTS
- CUSTOMER PROPRIETARY SOLUTIONS
- PORTABLE IFE SOLUTION



GROUND TOWER



SATELLITE EARTH STATION

# Bizjet Connectivity: Significant Market Potential

Best tail mount antenna in the market



## High Throughput Ku Band Connectivity

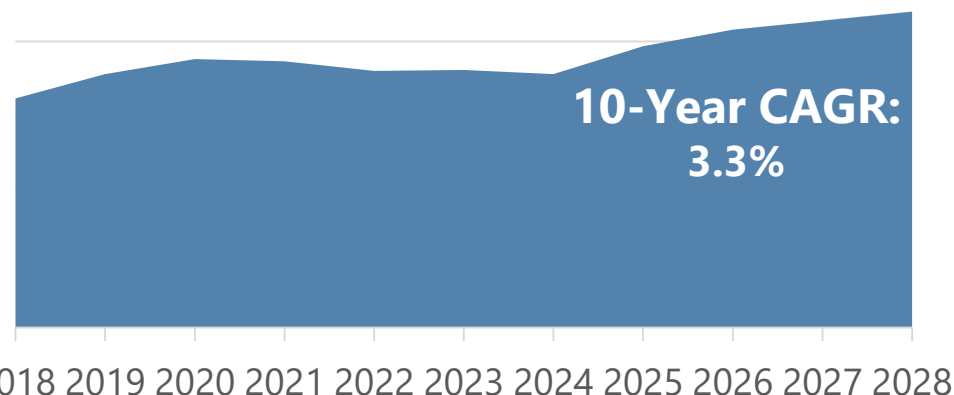
Tail mount antenna is lighter and better functional fit

Faster than air-to-ground

More reliable and better coverage than Ka band

Partnered with Satcom Direct and IntelSat FlexExec

## Business Jet Deliveries



## Large addressable market

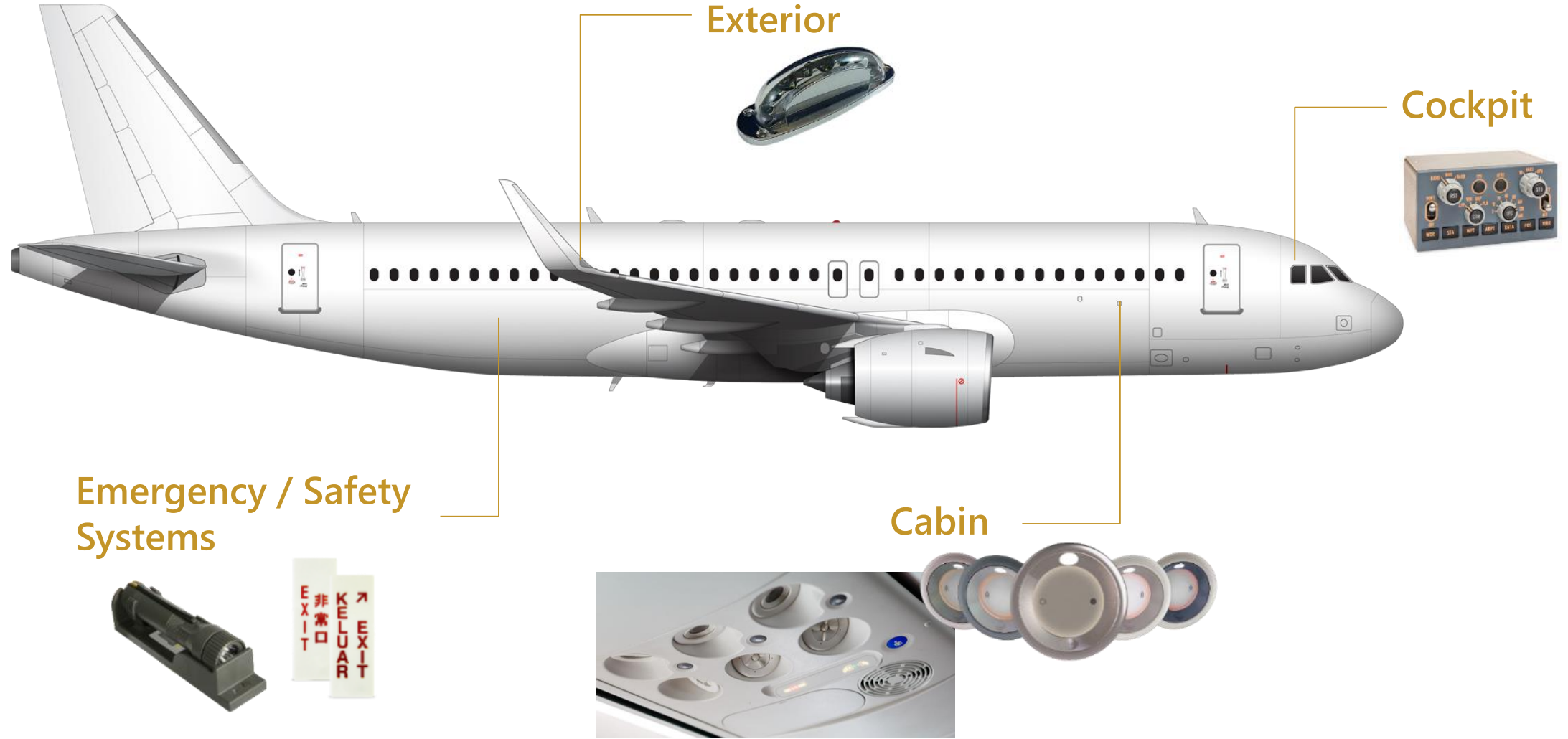
Current fleet:

~5,000 aircraft x \$250k = ~\$1.3 billion

Estimated new builds:

>8,000 aircraft x \$250k = ~\$2 billion

# Lighting & Safety Solutions





# Aircraft Lighting Systems

## Industry Leader in Aircraft Lighting

A complete array of innovative, lightweight, reliable, solid-state lighting systems

### Products

- » Exterior lighting systems
- » Cabin lighting systems
- » Cockpit lighting systems

### Markets

- » Commercial transport
- » Military
- » Business and general aviation



Illuminating commercial, business and military aircraft, including Airbus, Boeing, Embraer, Lockheed and Textron

# Lighting & Safety Technologies & Content Value

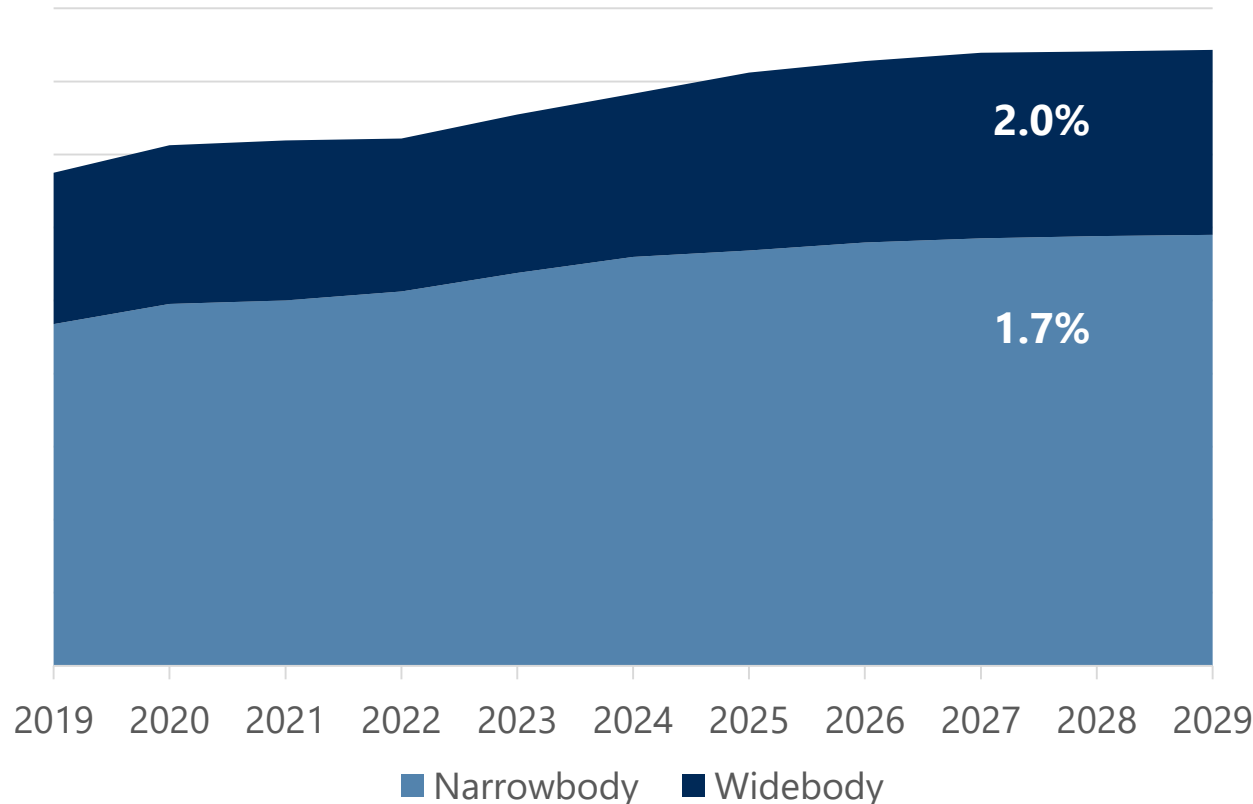
Lighting Solutions	ATRO	Business	Wide body Content	Narrow body Content	Bizjet
<b>Cockpit</b>					
Panels / Keyboards	✓	LSI	\$20k	\$15k	\$10k
Caution / Warning	✓	LSI	\$30k	\$20k	\$10k
Utility			\$10k	\$10k	\$3k
Displays			\$15k	\$15k	\$5k
<b>Exterior</b>	✓	LSI	\$30k	\$20k	\$10k
<b>Cabin</b>					
Emergency / Signage	✓	LSI	\$50k	\$20k	\$5k
Area / Mood			\$175k	\$70k	\$10k - \$30k
Passenger Service Units	✓	PECO	\$250k	\$85k	
Business / First Class Seats	✓	PGA	\$55k	\$3k	
<b>TOTAL</b>			<b>\$635k</b>	<b>\$258k</b>	<b>\$53k - \$73k</b>

# Aircraft Lighting & Safety Addressable Market

## Commercial and BizJet markets next 10 years

### Aircraft Production

10-Year CAGR



### New Build Market Opportunity

#### Wide body

> 5,000 aircraft x \$635k = ~\$3.2 billion

#### Narrow body

> 16,000 aircraft x \$243k = ~\$3.9 billion

#### BizJets (2018-2028)

> 8,000 aircraft x \$75k = ~\$600 million

# Addressing Trends: Modernization of Aircraft

## Clean, Streamlined Cockpit



Traditional Cockpit with Circuit Breakers  
Learjet 45



Electronic Power Distribution  
PC-24

# Airframe Electrical Power Addressable Market

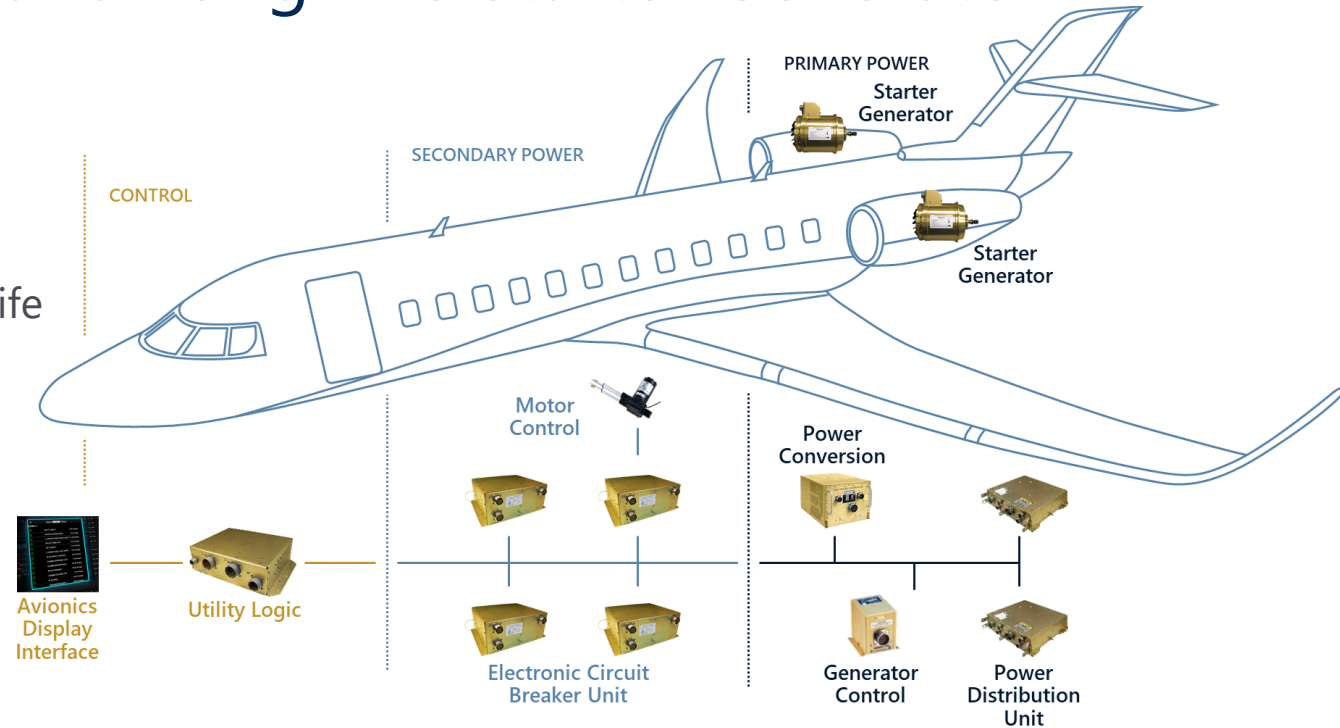
## Electronics Circuit Breaker Units and Long-Life Starter Generator

### Innovation and Value for Small to Mid-Size Turbine Aircraft

- » Lighter weight, greater flexibility, increased safety
- » Higher reliability - starter generator has almost 10X life

### Programs to date

- » Eclipse 500, Lear 85
- » Bell 505/V280/525, Daher TBM, Cessna Denali, Pilatus PC 24, Bombardier Global 7000



	Small Turbine	Medium Turbine	Large Turbine
Shipset value	\$80k – \$120k	\$100k – \$200k	\$200 – \$600k
Number of aircraft/year	310	230	280
<b>TOTAL</b>	<b>~\$30 million</b>	<b>~\$35 million</b>	<b>~\$110 million</b>

# Aerospace

## Well Positioned on Wide Range of High Profile Next-Gen Aircraft

### CURRENT

#### Embraer Phenom 100/300

Exterior lighting

#### UH-60 Blackhawk

Exterior & cockpit lighting

#### V-22 Osprey

Cabin, cockpit & exterior lighting

#### Cessna

Exterior & cockpit lighting

#### Airbus A380

Cabin lighting & cabin electronics

#### Boeing 787

Passenger power, fuel doors & cockpit lighting

#### Boeing 737 NG/BSI

PSU, passenger power available & cockpit lighting

#### F-35 JSF

Exterior lighting system & lighting controllers

#### Airbus A350

Emergency egress lighting & passenger power

### NEXT GENERATION

#### Boeing 777X

PSU, fuel doors, cabin, cockpit & exterior lighting

#### Boeing 737MAX

Exterior lighting system & PSU

#### Embraer E2

Interior and exterior emergency lighting system & PSU

#### Pilatus PC-24

Airframe power & induction starter generator

#### Cessna Denali

Induction starter generator, electronic circuit breakers & passenger power

#### Bell 525/V280/505

Airframe power, lighting/safety



# Test Systems

## Testing for Mission-Critical Industries

### Award-winning test solutions

- » Integrated logistics support
- » Validate operating performance on multiple top-priority defense communications and weapons systems platforms

### Improve system reliability, reduce costs, streamline TPS development, and preserve vital legacy investments with test solutions

- » Instruments, ATE, and switching systems
- » Commissioning, logistics, support, obsolescence management
- » Experience includes:
  - > Military aircraft, avionics, and vehicles systems
  - > Weapons systems
  - > Communications and radar systems
  - > Engine systems
  - > Military satellites
  - > Shipboard systems



Expanding test instrument business with next-gen PXI platform offerings



Next-gen radio test set that combines 16+ field test capabilities in one device



# ***ASTRONICS***

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## FINANCIALS



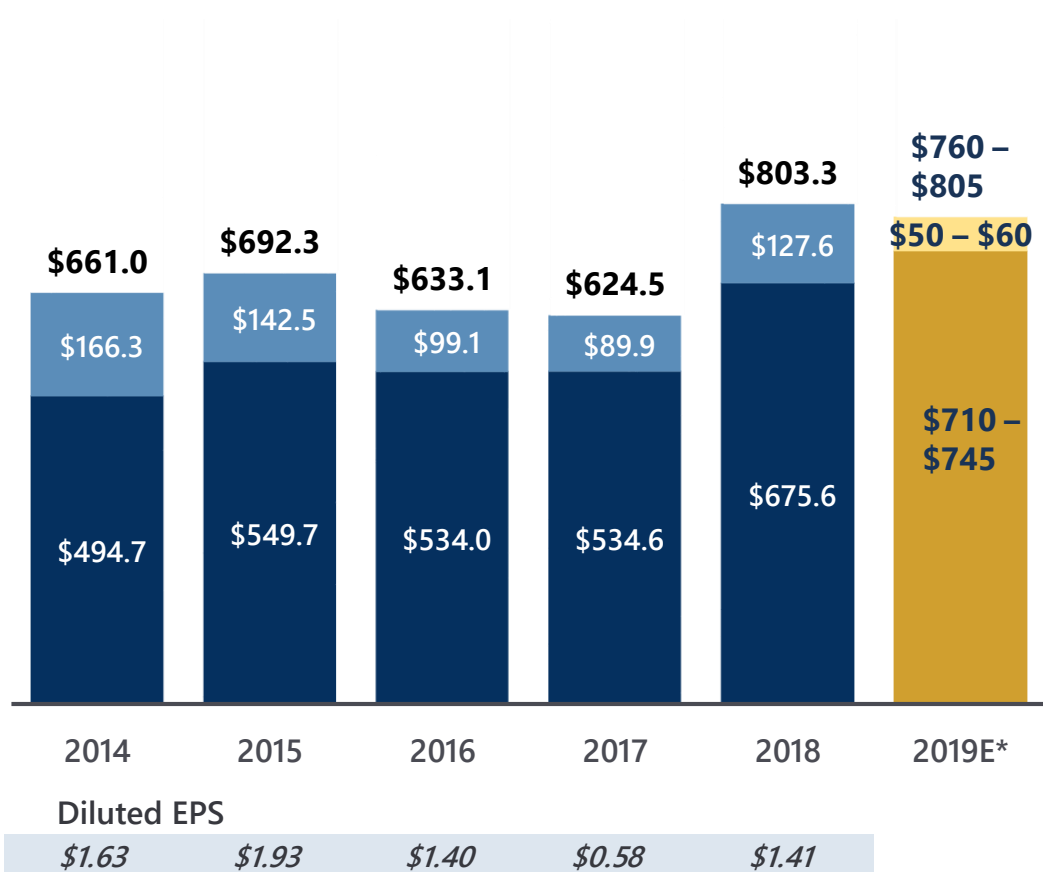
INNOVATION. COLLABORATION. SUCCESS.



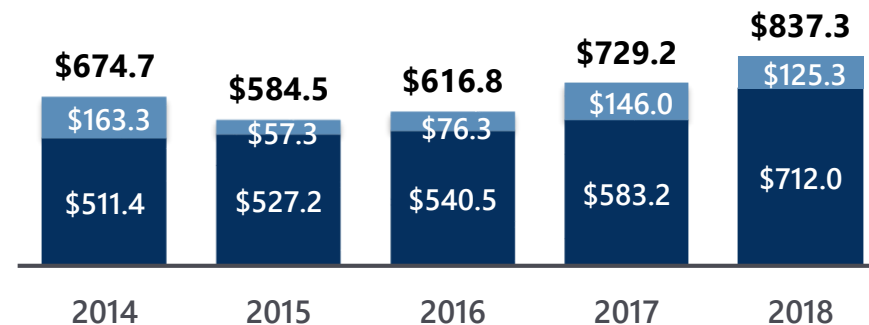
# Sales, Bookings & Backlog

(US\$ in millions; except EPS)

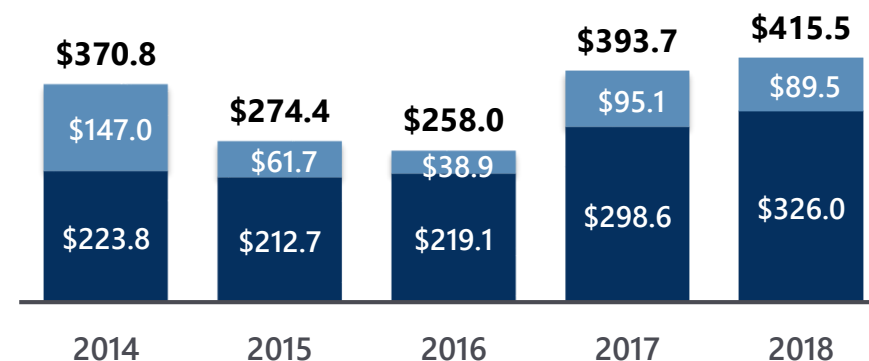
## Sales



## Annual Bookings



## Backlog



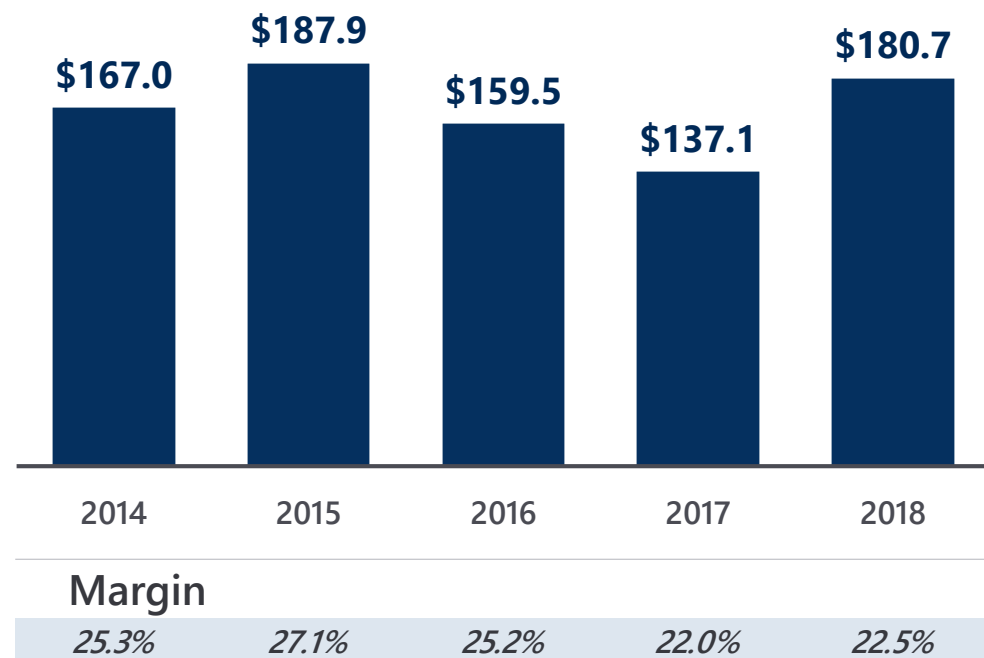
■ Aerospace ■ Test

\* Guidance provided as of February 21, 2019.

# Profit and Margins

(US\$ in millions)

## Gross Profit and Margin



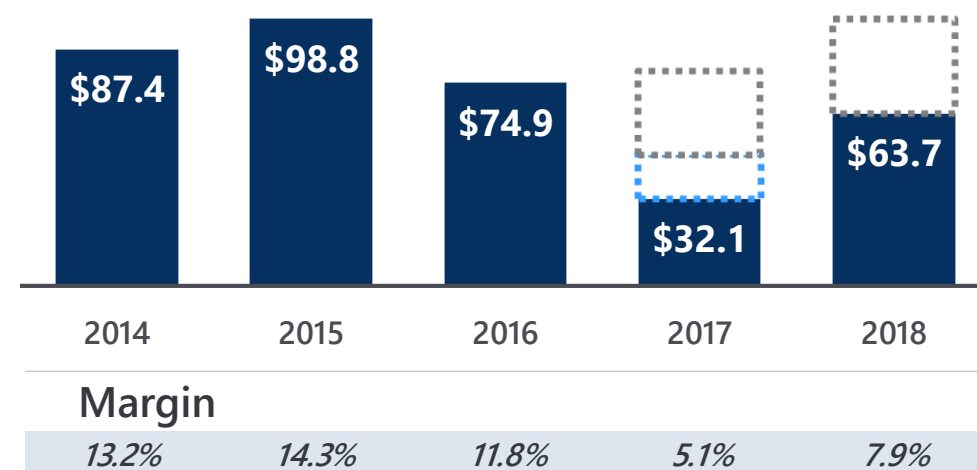
## Operating Profit and Margin\*



Losses of \$30.9 million and \$34.7 million from three aerospace businesses in 2017 and 2018, respectively



Impairment charge of \$16.2 million associated with Armstrong Aerospace in Q4 2017

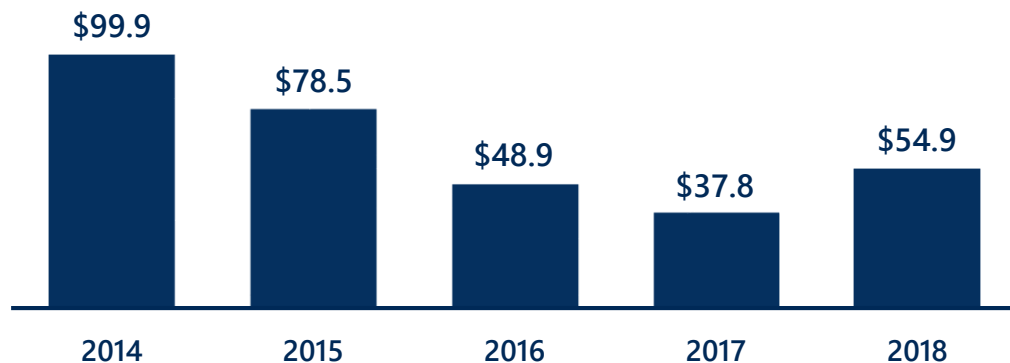


\*As reported

# Balance Sheet and Cash Flow

(US\$ in millions)

## Cash from Operations



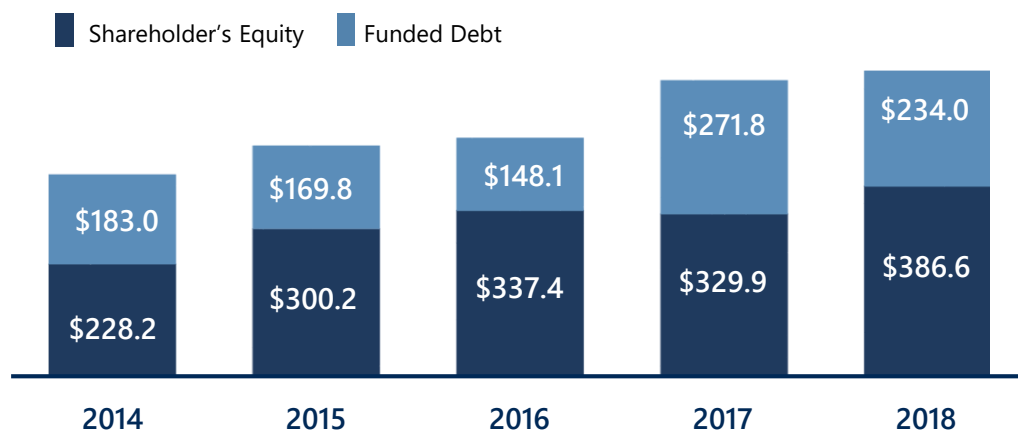
## Capital allocation priorities:

1. Pay down debt
2. Acquisitions
3. Organic growth
4. Opportunistic stock repurchases

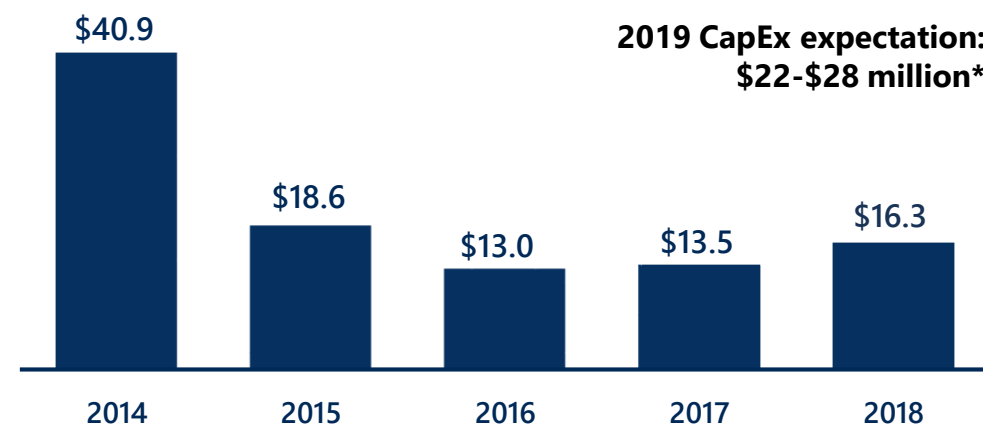
## Tolerance for debt:

- » 2x - 3x
- » Willing to flex up

## Funded Debt & Shareholders' Equity



## Capital Expenditures





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# Astronics Corporation

SUPPLEMENTAL  
INFORMATION



INNOVATION. COLLABORATION. SUCCESS.

***ASTRONICS***

astronics.com

# Extensive List of Customers

## Representative List

240+ Airlines

Airbus

AMAC Aerospace

Bell Helicopter

Boeing

Bombardier

Carson Helicopters

Cirrus Aircraft

Comlux

Dassault Aviation

Embraer

General Dynamics

Gogo

Gulfstream

Hughes

Intel

Jet Aviation

L3 Technologies

Leonardo

Lockheed Martin

NASA

Panasonic Avionics

Raytheon Company

Rockwell Collins

Sikorsky

Textron

Thales

Thompson Aero Seating

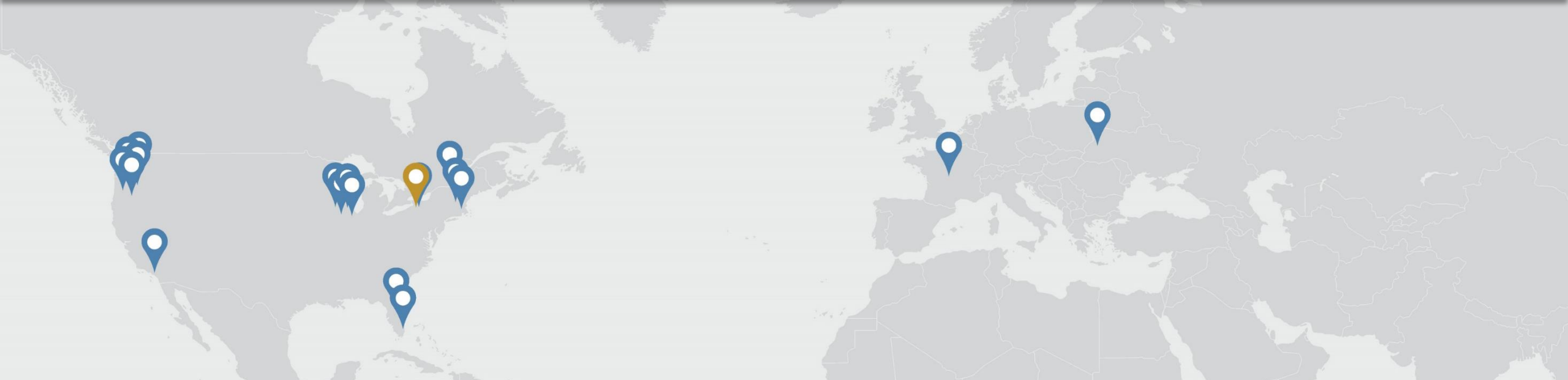
U.S. Army/Navy/Air Force/Marines

Zodiac Aerospace



# Broad Global Footprint

Worldwide Manufacturing, Sales and Support



**1.2M** Square Feet of Manufacturing Strength

**~2,700** Employees

**27%** Engineering/Technical

# Building a Portfolio for Growth

## PECO Manufacturing

- » July 2013
- » Aerospace: Manufacturing Services

## PGA Avionics

- » December 2013
- » Aerospace: Power, Executive

## Armstrong Aerospace

- » January 2015
- » Aerospace: Systems Certification, Power

## Telefonix PDT

- » December 2017
- » Aerospace: Connectivity

2013

2014

2015

2016

2017

2018

2019

## AeroSat

- » October 2013
- » Aerospace: Connectivity

## EADS N.A. Test

- » February 2014
- » Test

## Custom Control Concepts

- » April 2017
- » Aerospace: Executive

## Sale of Semi Test Business

- » February 2019
- » Test: Semiconductor



# Lighting & Safety

Serving commercial, business jet and military

- » 777/777X - approximately \$240K\* in content  
(PSUs, fuel access doors, exterior, cabin & cockpit lighting)
- » 737 - approximately \$85K\* in content  
(PSUs, exterior & cockpit lighting)
- » 787 - approximately \$45K\* in content  
(fuel access doors)
- » 747 - approximately \$30K\* in content  
(PSUs, fuel access doors)
- » Embraer E2  
(PSUs, emergency lights)



## » Exterior Lighting Systems



## » Cabin Lighting Systems



## » Cockpit Lighting Systems



# Power and Motion

First Mover Advantage: Establishing leadership in small aircraft airframe power

The technology for the future of small aircraft: Solid-state power distribution systems replace extensive wiring and traditional electromechanical components with modular electronics and software



- » Intelligent systems for power generation, distribution and conversion
- » Increased reliability
- » Reduced weight
- » Automation, flexibility
- » Lower life cycle cost
- » Reduces pilot work load

## Wins:

- » Daher TBM 900
- » Bell 505, 525 & V280
- » Pilatus PC-24
- » Cessna Denali
- » Global 7000

COREPOWER®



# ***ASTRONICS***

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information:



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