

Frequency Electronics, Inc.



Needham Growth Conference

January 2015



This presentation contains forward-looking statements. The forward-looking statements, which reflect management's best judgment based on factors currently known, involve a number of risks and uncertainties. These factors and other risks inherent in the Company's business are described from time to time in the Company's SEC filings, including its Annual Reports and Quarterly Reports on Forms 10-K and 10-Q. Actual results may vary materially. The Company undertakes no obligation to revise the forward-looking statements contained herein to reflect events or circumstances after the date hereof, or to reflect the occurrence of unanticipated events.

Martin Bloch- President & CEO

Alan Miller- CFO



Growing & Profitable World Leader

High Precision Time & Frequency Technology

for

- **Satellite Payloads**
- **Secure Communications**
- **Other Gov't/DOD & Commercial Evolving Markets**
- **Cyber Threats**
- **Homeland Security**

High Precision Time & Frequency (T&F) Technology



Products based on high precision T&F technology are essential in critical electronic systems & platforms for space and a wide spectrum of C4ISR. These products drive the level of performance of entire systems or platforms.

**FEI is the World Leader in Quartz &
Rubidium High Precision T&F Technology**

FEI COMPETITIVE DIFFERENTIATORS



1- UNMATCHED LEGACY

2- ONLY company controlling through in-house technology & production the most important

KEY BUILDING BLOCKS

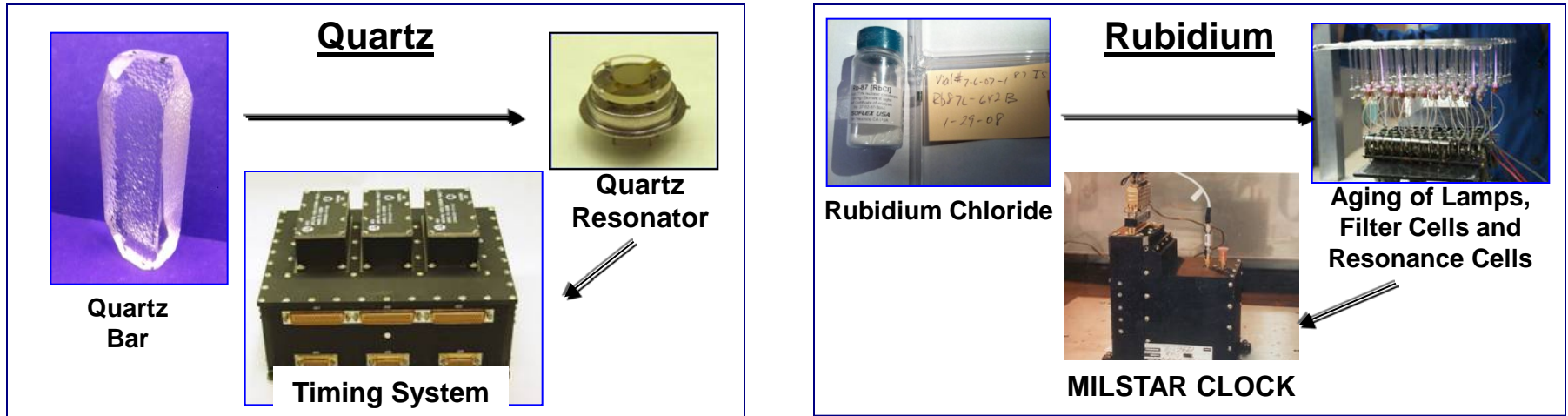
to establish the level of performance of
High Precision T&F Products and Systems

Critical Performance

Cycle Time

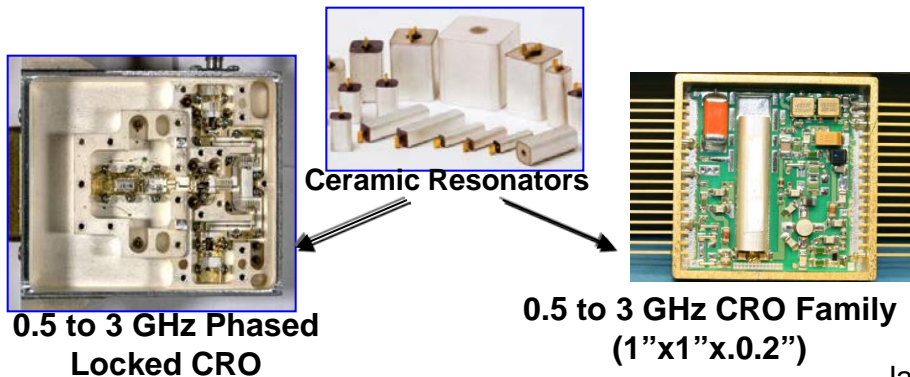
Reliability

IN HOUSE KEY BUILDING BLOCKS

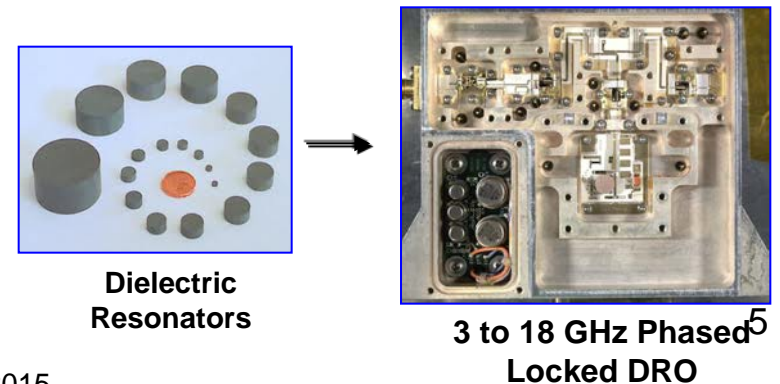


**Destination Critical Technologies (IN HOUSE)
from Raw Materials to Finished Products**

Ceramic Resonator Oscillator (CRO)



Dielectric Resonator Oscillator (DRO)



FEI Technology Applications



Frequency's exceptional High Precision T&F technology is applied in products for satellite payloads, secure communications, C4ISR, mobile and other platforms (Air, Land, Sea).

- Enable UPGRADES at affordable cost for EXISTING platforms/systems- "Do more with less"
- Meet the challenge of NEW SYSTEM PERFORMANCE requirements

Existing Mobile Platform Upgrades



- Aegis system
- Humvees
- F-15/18 vs F-35s
- Patriot missile
- Helicopters
- UAVs
- Secure Communication
- Satellites

“Do More with Less”



**FEI's proprietary products, especially for harsh environments,
generate enhanced performance and functionality**

Spending Millions to Save Billions

FEI Technology Embedded in Multiple C4ISR Systems/Platforms



Command & Control

- **AMRAAM** (Advanced Medium-Range Air-to-Air Missile)
 - **AEGIS** Combat system
- **IBCS** (Integrated Battle Command System)
 - Patriot System
- **JLENS** (Joint Land-Attack Cruise Missile Defense Elevated Netted Sensor System)
 - Ground Stations
- **THAAD** (Terminal High-Altitude Air Defense)
 - Radar

Communications (Secure)

- **DSP** (Defense Support Program)
- **MILSTAR** (Military Satellite Communications Systems)
- **AEHF** (Advanced Extremely High Frequency System)
 - **WGS** (Wideband Global SATCOM)
- **JTRS** (Joint Tactical Radio Systems)
 - **GMR** (Ground Mobile Radios)
- **MIDS** (Multifunctional Information Distribution System)
- **WIN-T** (Warfighter Information Network-Tactical)

**FEI Technologies and Products
Applied in Critical Platforms**

Countermeasures

- Man Pac
- Mobile Vehicles/Platforms
- Ground Stations
- **SAR** (Synthetic Aperture Radar)
- **Next GEN JCREW** (Joint Counter Radio controlled Improvised Explosive Device Electronic Warfare)

Intelligence, Surveillance & Reconnaissance

- **SIGINT** (Signal Intelligence)
- **ELINT** (Electronic Intelligence)
- **COMINT** (Communications Intelligence)
- **UAV** (Unmanned Aerial Vehicles)

FEI's Near Term Major Opportunities



- ❑ **SECURE COMMUNICATIONS**
- ❑ **SATELLITE PAYLOADS- Gov't/DOD & Commercial**
 - Multi-function Communication Satellites
(cost = \$200M to \$2B each)
 - Small Earth-Orbiting Satellites



U.S. Not Prepared for GPS Outages

“GPS ... an invisible utility ... leaving [essential operations] vulnerable to GPS disruption.”

per report from GAO

- **Solutions to counter GPS jamming and/or multi-path**
- **Replace \$10 clocks with \$10,000 ruggedized clocks**
- **FEI's technology, both Satellite & Terrestrial-based, is essential for all Critical Government/DOD and Commercial GPS-dependent networks**

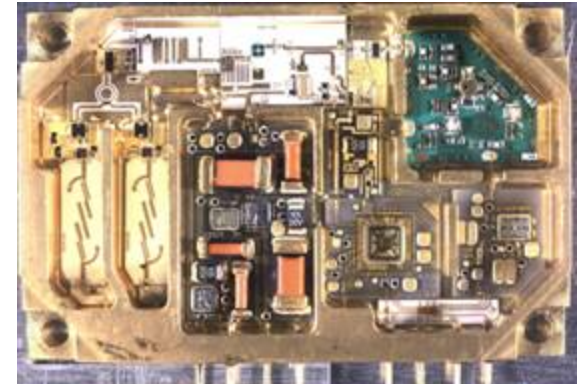
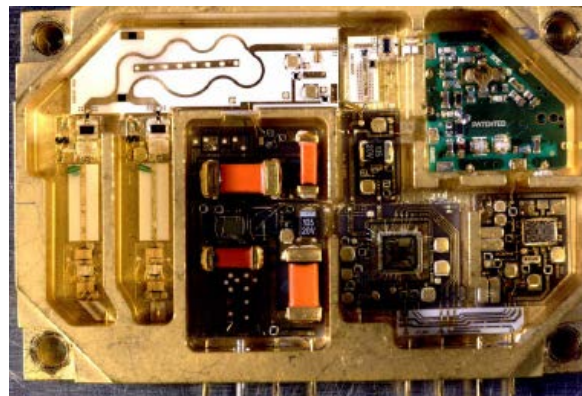
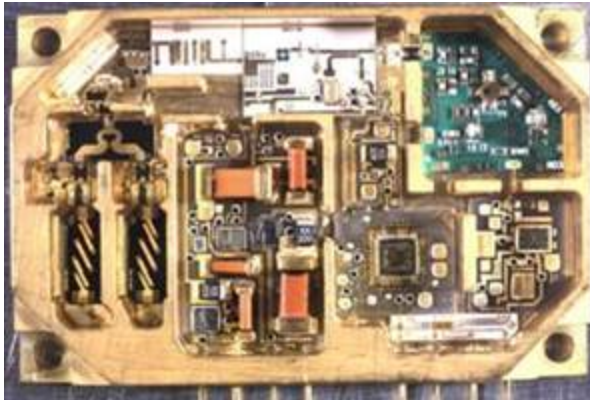


- **Multi-function Satellite Payloads**
 - More channels
 - More bandwidth & data throughput
 - Less power, smaller size & weight
- **Hosted Payloads**
 - Piggy-back 3rd party payloads on other missions
- **Small Earth-Orbiting Satellite Constellation Payloads**
 - New Emerging Market



Frequency Synthesizers

- L-Band to Ka-Band (Recently Developed, Qualified and Delivered for flight)
- a 50:1 Reduction in Size)



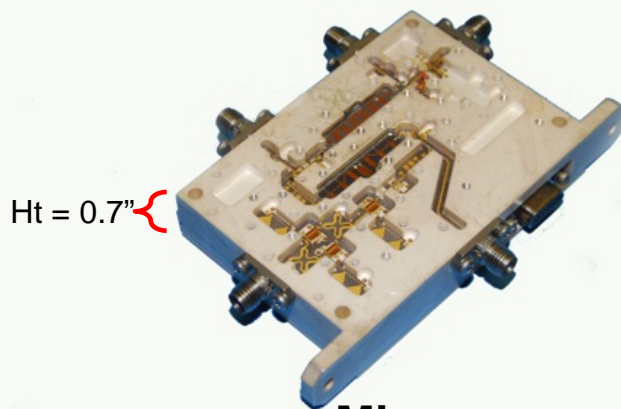
2" L x 1.3" W x 0.3" H

FEI's Next New Satellite Products



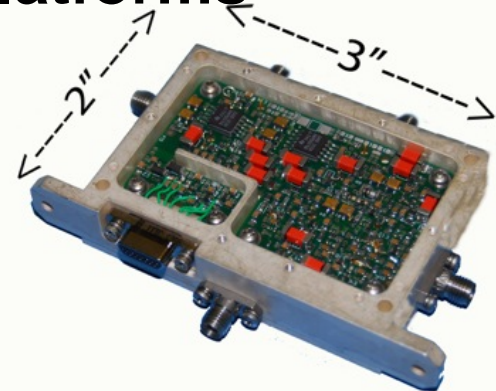
Frequency Receivers & Up/Down Converters Ready to Accept Orders

- Early participant with its legacy technology
- FEI's new designs provide:
 - Faster response (shorter cycle time)
 - Smaller footprint and less weight
 - Lower cost
 - More bandwidth on existing platforms



Ht = 0.7"

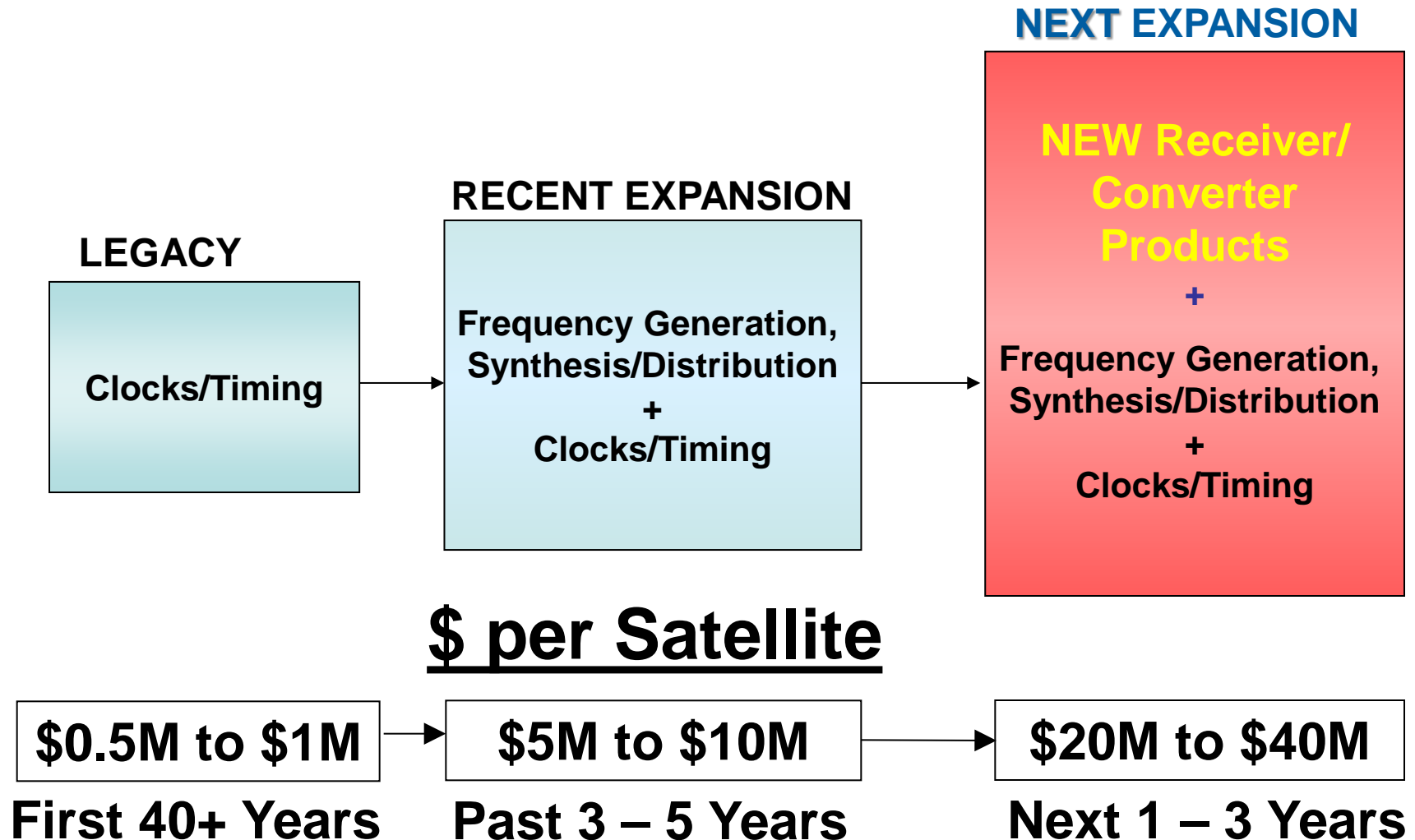
Microwave side



DC/Control side

FEI Revenue

Multi-function Satellite Payloads



FEI Products

Multi-function Satellite Payloads



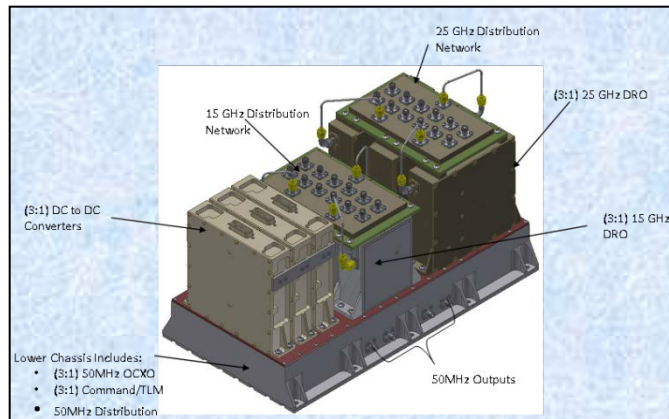
LEGACY



Clocks & timing

First 40+ Years

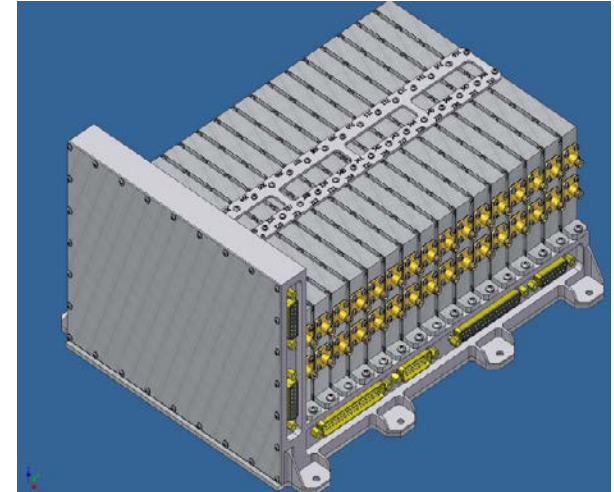
RECENT EXPANSION



Includes frequency generation & distribution

Past 3 – 5 Years

NEXT Expansion



New Receiver & Converter Products

Next 1 – 3 Years



RESOURCES, RESULTS & OUTLOOK

FEI's World-wide Facilities/Operations



- ★ Satellite/Other DOD Engineering & Mfg- FEI- NY
- ★ Commercial Manufacturing- FEI-Asia, China
- ★ Advanced RF microwave technology- FEI-Elcom Tech, NJ
- ★ Oscillator/component manufacturing- Morion, Russia



- ★ GPS & SAASM Technology & Commercial Sales/Support- FEI-Zyfer, CA
- ★ Network Synch & Management - Gillam-FEI, Belgium

FEI Global Customers



U.S. Gov't/DOD



Raytheon



EXELIS



Strong Balance Sheet



- **Total Assets** **\$124M**
- **Net Working Capital** **\$ 80M**
- **Cash and ST Investments** **\$ 20M**
- **Long Term Debt **** **\$ 11M**
- **Shareholder Equity** **\$ 91M**

As of October 31, 2014

****Established \$25M credit line facility with JPMorgan Chase June 2013**

FEI Recent Operating Results



Fiscal Years ended April 30

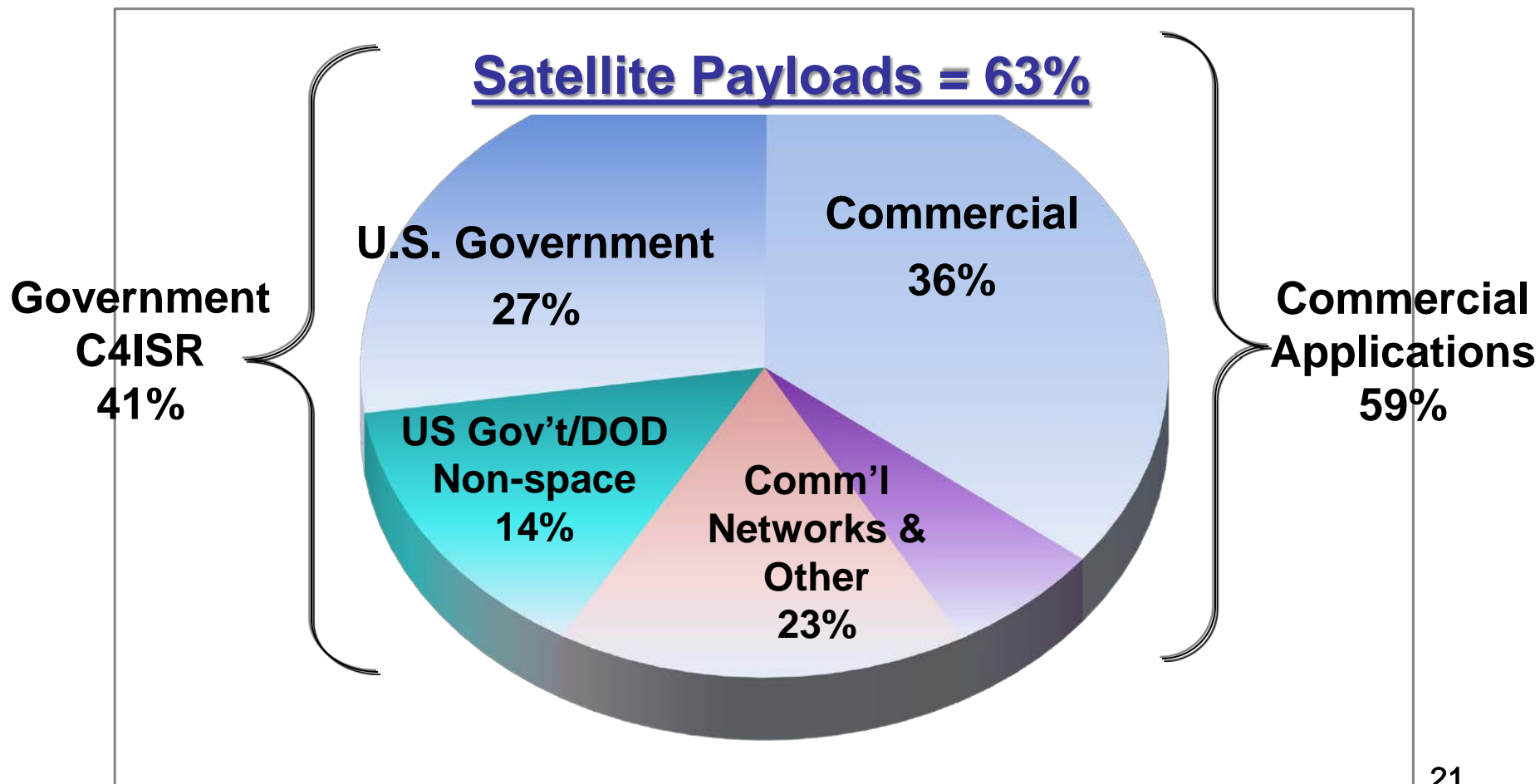
(in millions)	FY2012	FY2013	FY2014	FY2015 6-Months
REVENUE	<u>\$63.6</u>	<u>\$68.9</u>	<u>\$71.6</u>	<u>\$39.0</u>
Gross Margin	\$24.6	\$25.1	\$24.8	\$12.3
GM Rate	38.7%	36.4%	34.6%	31.7%
SG&A Expenses	\$14.0	\$14.7	\$14.1	\$7.0
R&D Expense	\$ 3.9	\$5.7	\$5.8	\$2.6
OPERATING PROFIT	\$ 6.7 10.5%	\$4.7 6.8%	\$4.9 6.8%	\$2.7 7.0%

Total IR&D Investment 2004 – 2015 > \$65 M

FEI Revenue by Business Area



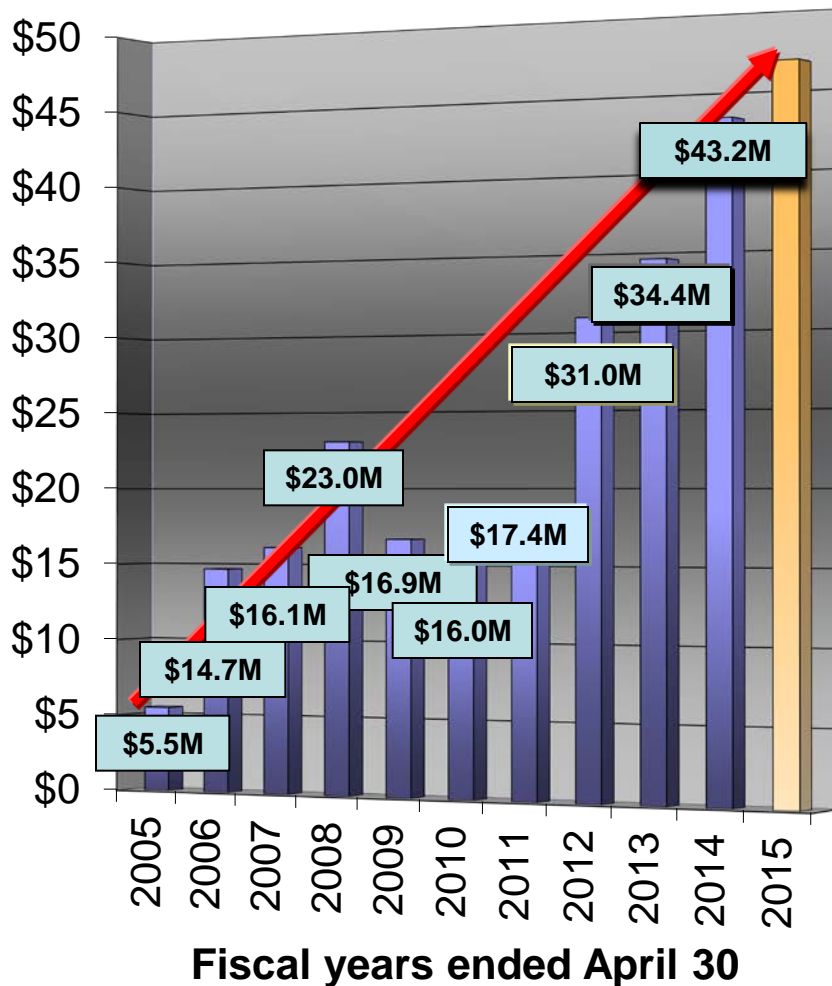
Fiscal Year 2015 Q2 Revenue Breakdown:



Satellite Payload Business Growth



Government & Commercial Space Revenues



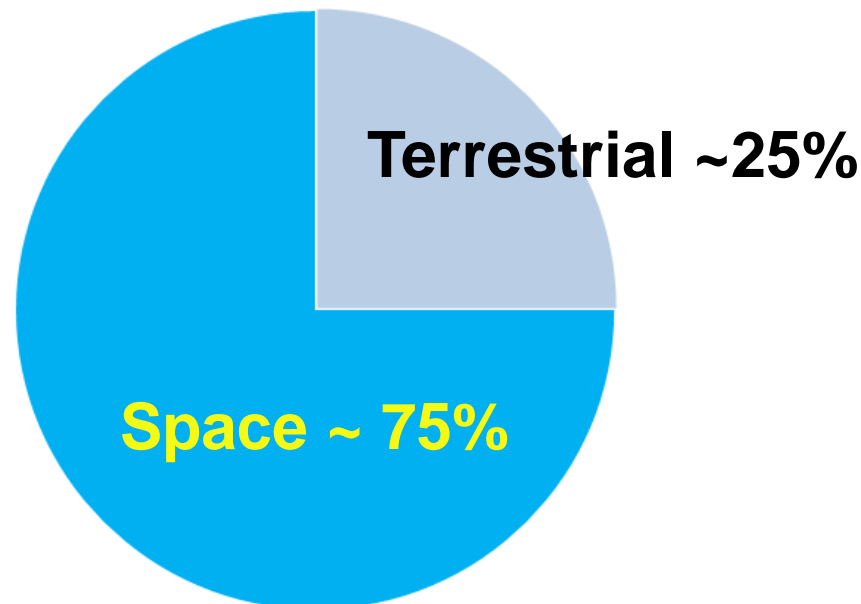
**FEI's Fastest Growing
Business Area**

Payload Business Growth
reflects
previous expansion
into
frequency generation &
synthesis/distribution

Strong Backlog



Funded Backlog ~ \$52 M*
– Approx 50/50 Government/Commercial



***Backlog does not
include booked orders
not yet fully funded**

**Maintaining strong backlog because of
Frequency's unique legacy and technology**

Large & Multi-year Gov/Mil Contracts



Secure Multi-function Satellites

- Master Oscillator
- Synthesizers and Frequency Generators

GPS III RAFS Program

- Development phase- under contract since FY09
- Production phase (34 satellites) – in Pipeline

WGS: Wide-band Global SatCom

- Delivered WGS 1 to 9, #10 under Contract
- WGS 11 and 12 in Pipeline

AEHF: Advanced Extremely High Frequency Secure Communication Satellites

- Delivered AEHF 1, 2, 3, 4 with 5 & 6 under Contract
- AEHF 7 & 8 or derivatives in Pipeline

Gov't Funded Advanced Clock Developments

- Master Satellite Clock- delivered, follow-on in Pipeline
- Super clock- funded FY2012, additional phases in Pipeline

Large & Multi-year Comm'l Contracts



Iridium NEXT- 81 satellite constellation

- Master Frequency Generator Unit
- L-Band RF Converter

EchoStar

- Master Frequency Generator Unit
- Synthesizers

ViaSat

- Master Oscillator & Microwave Subsystem

Intelsat- Flights 29, 33 and 35 (6 satellites)

- Master Oscillator
- Frequency Generators

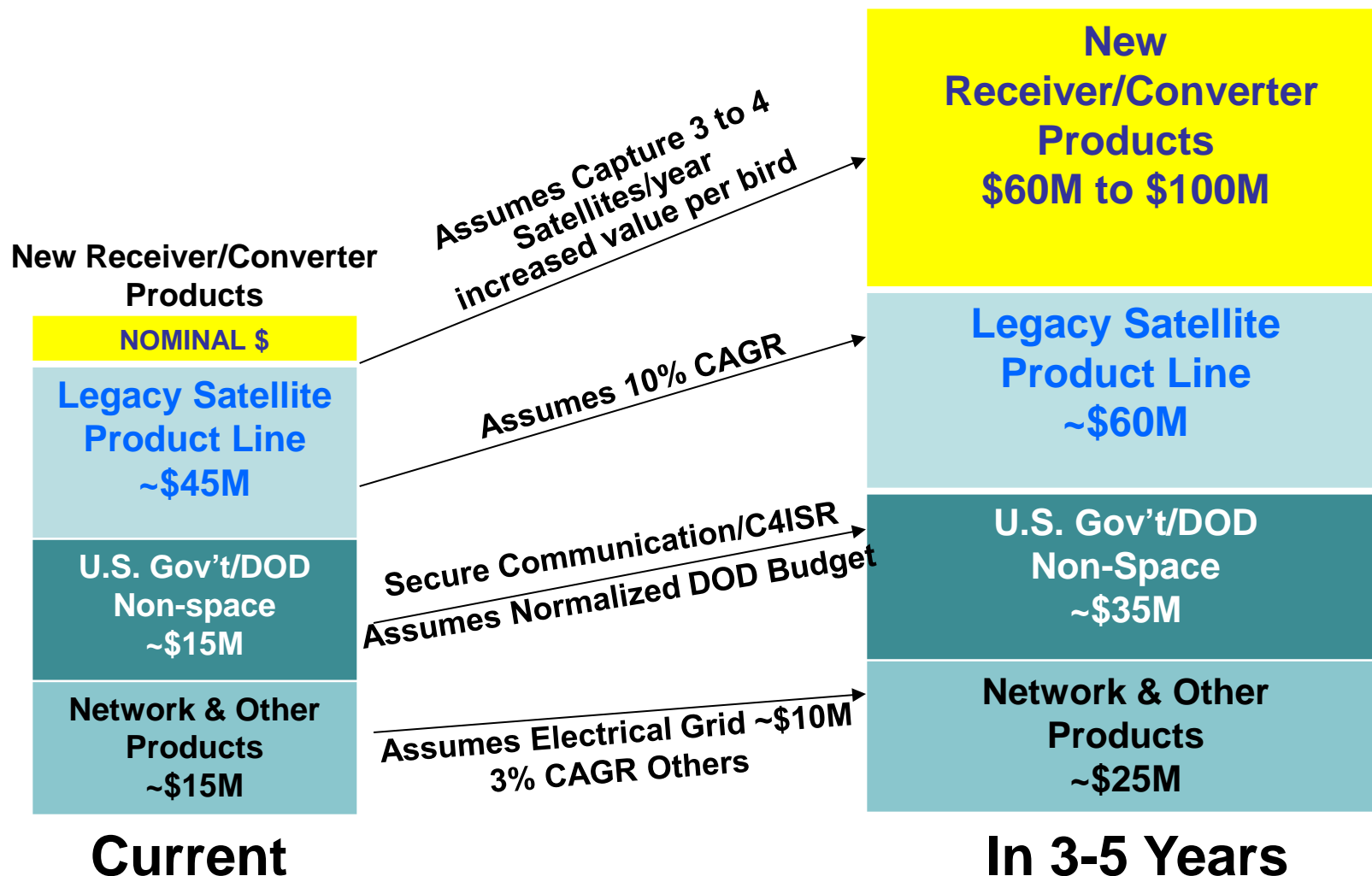
WAAS (Wide Area Augmentation System- enables airlines to use GPS)

- L-Band Receiver

InmarSat

- Master Oscillator
- Frequency Generators

Potential Revenue Outlook



Near-Term Objectives



Increase Revenue

- Gov't & Commercial satellites
- Terrestrial C4ISR
- Network Infrastructure

Raise Margins & Profitability

- Leverage existing cost structure
- Increase automation, common engineering designs

Promote Growth

- Partnering
- Mergers
- Acquisitions



LEGACY HIGHLIGHTS

FEI & Voyager Space Exploration



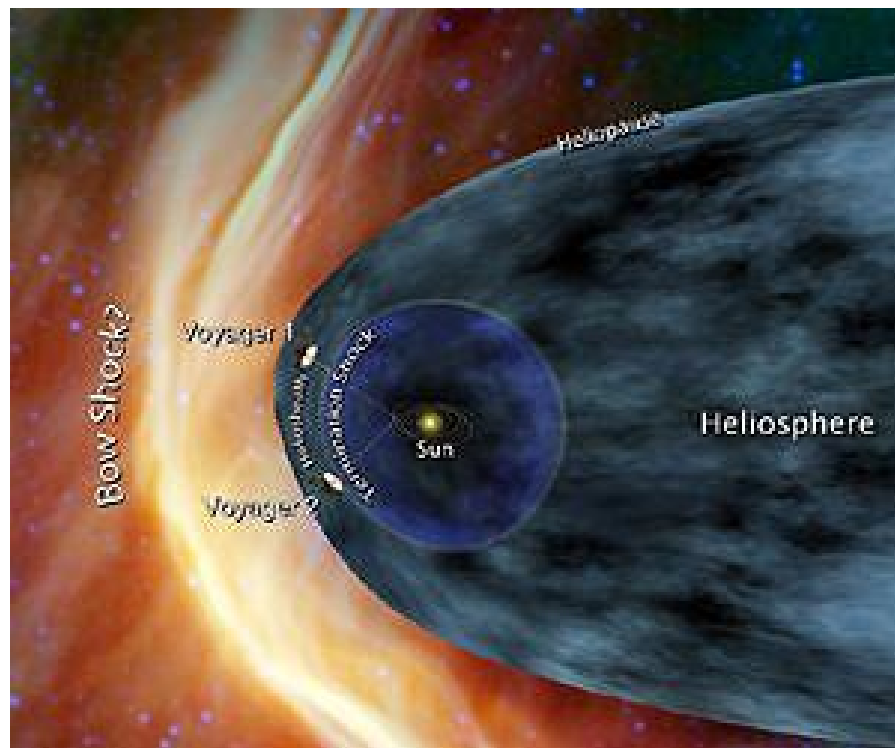
FEI's oscillators keeping precision time and frequency for 35+ years

- Launched in 1977, Voyager 1 and 2 are still in good health

- Voyager 2 is more than 9.1 billion miles (14.7 billion kilometers) away from the Sun.

- Both are operating as part of the Voyager Interstellar Mission

- an extended mission to explore the solar system outside the neighborhood of the outer planets and beyond



Artist's concept shows two Voyager spacecraft exploring a turbulent region of space known as the heliosheath, the outer shell of the bubble of charged particles around our sun

Frequency's 50 year Legacy in Space



50 Years of Hi-Rel Space Experience
Frequency Electronics, Inc.