



# Briefing to ACCRES

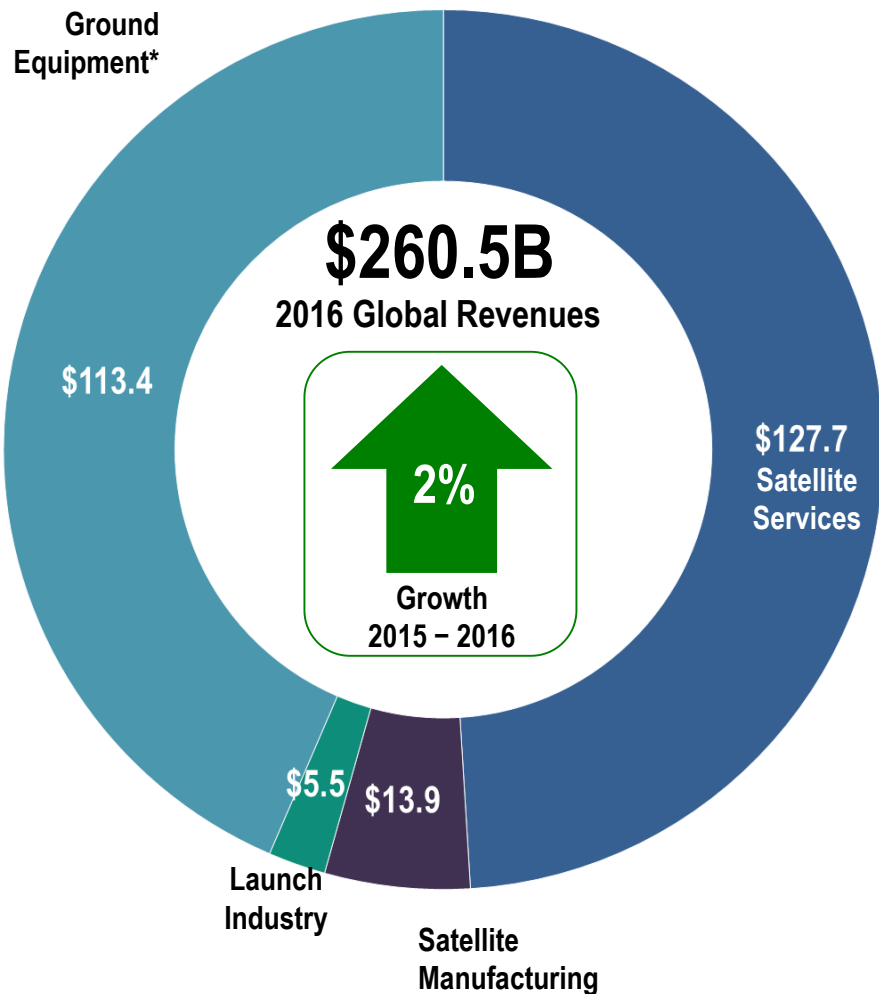
Charity Weeden

Senior Director of Policy, SIA

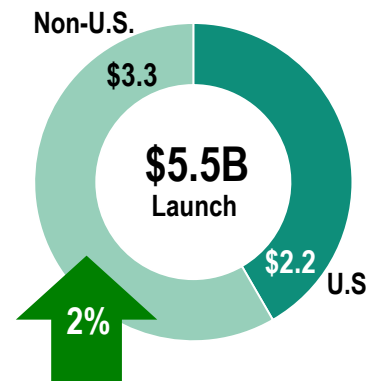
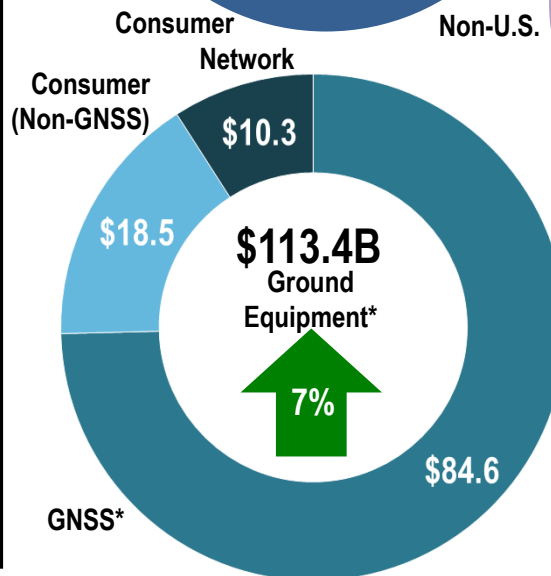
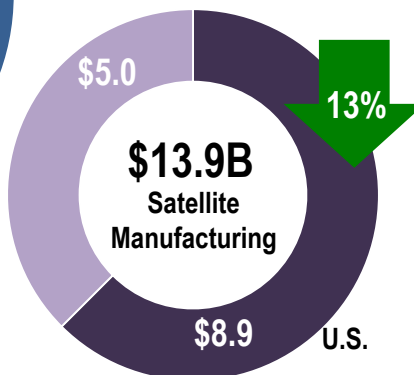
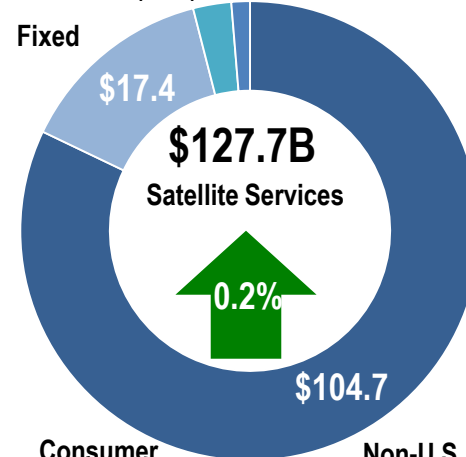
August 24, 2017

- State of Satellite Industry
- State of Global Commercial Remote Sensing Industry
  - » Operational
  - » Planned
- Commercial Remote Sensing Regulatory Reform
  - » Why it is important
  - » What is success

# 2016 Satellite Industry Indicators Summary

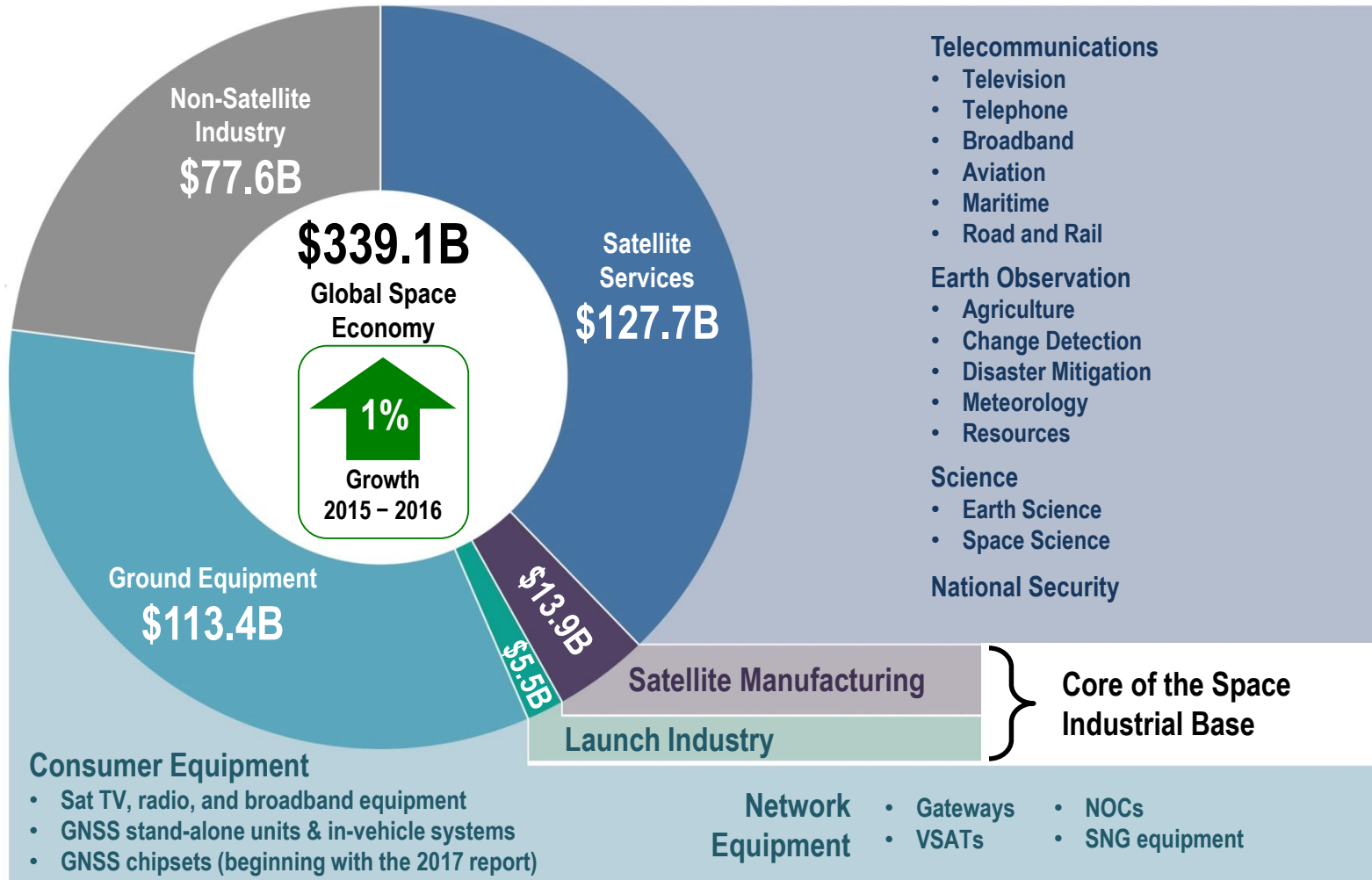


Mobile (\$3.6) Earth Observation Services (\$2.0B)

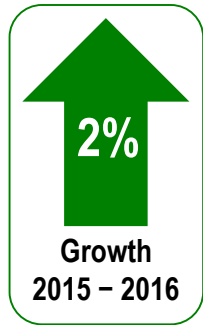


\*Ground equipment revenues include the entire GNSS segment: stand-alone navigation devices and GNSS chipsets supporting location-based services in mobile devices; traffic information systems; aircraft avionics, maritime, surveying, and rail .

# The Satellite Industry in Context



**\$260.5B**  
Satellite Industry  
(77% of Space Economy)



Prepared by:

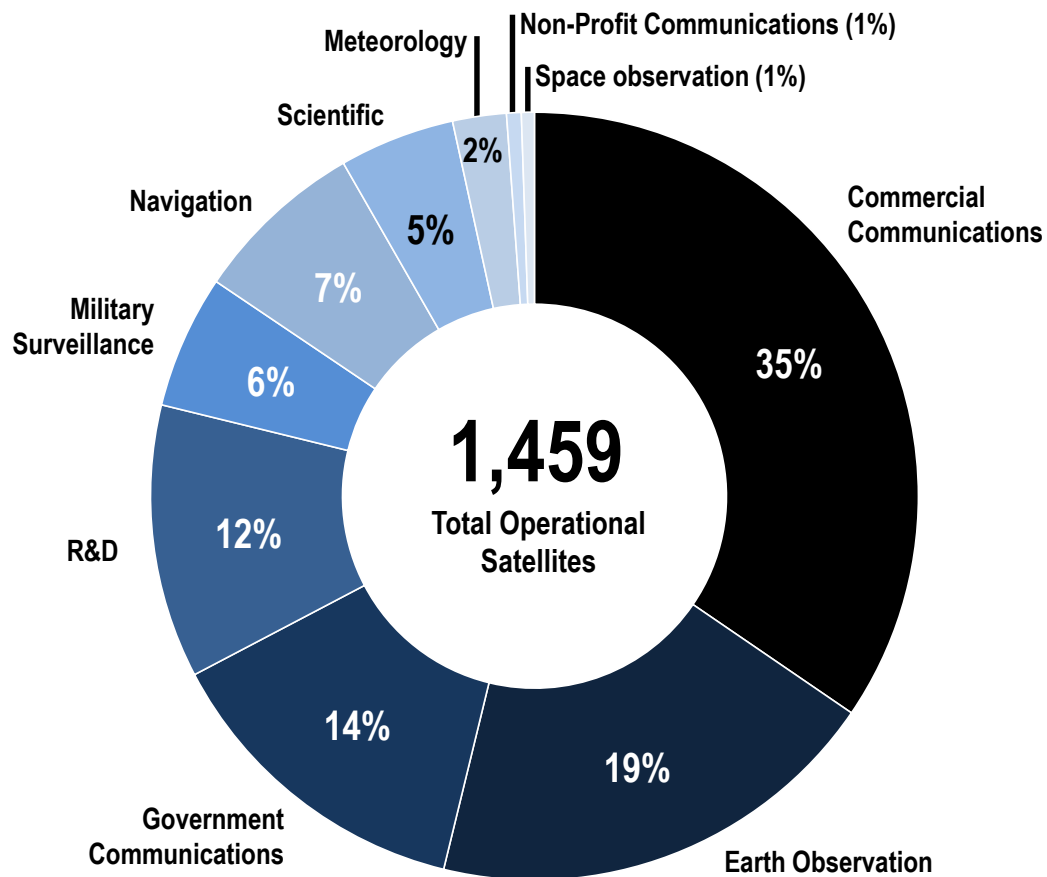


Notes: Network operations centers (NOCs), satellite news gathering (SNG), very small aperture terminal (VSAT) equipment, global navigation satellite systems (GNSS)

# The Satellite Network in Context



## Operational Satellites by Function (as of December 31, 2016)



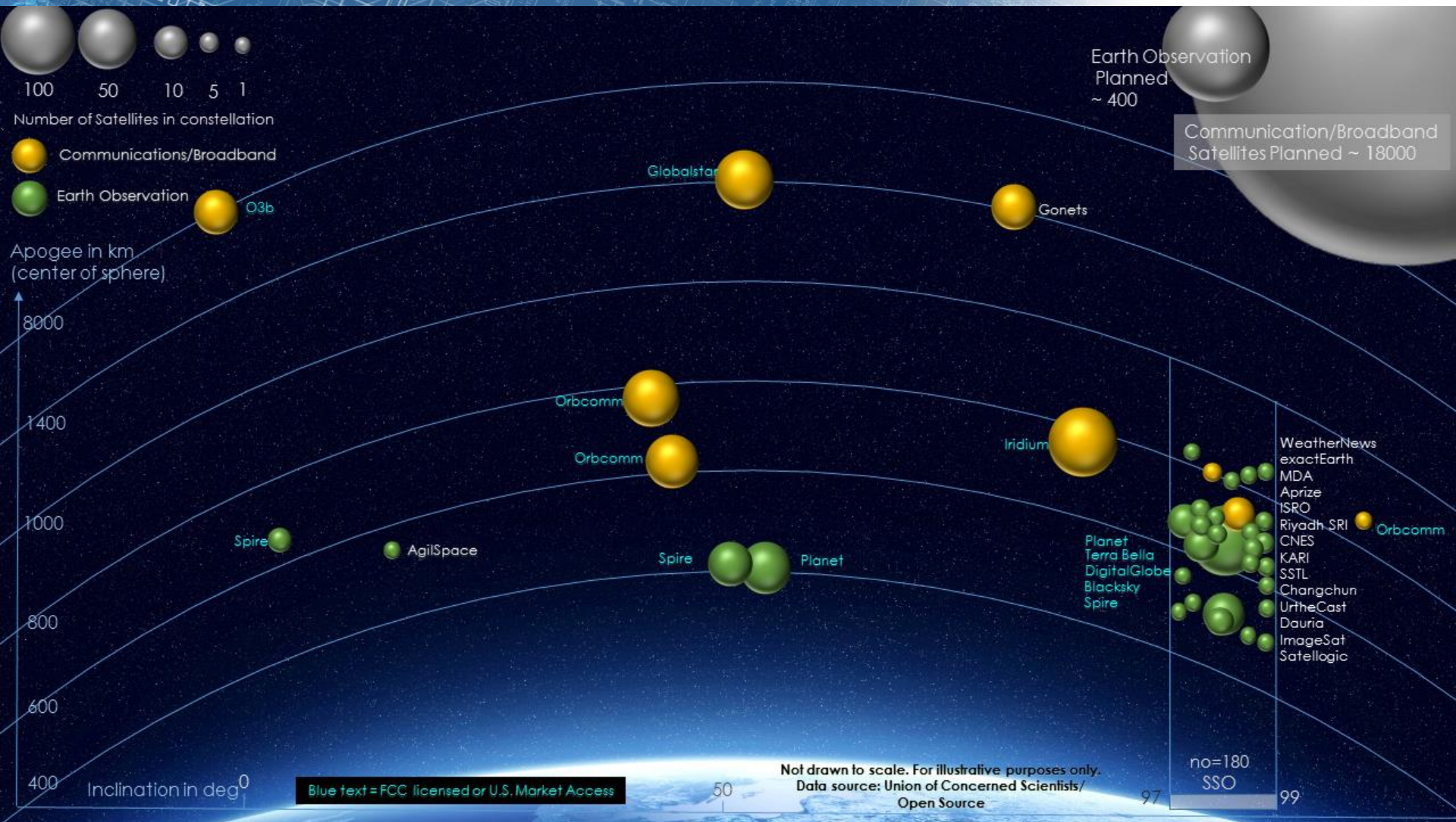
- Number of satellites increased 47% over 5 years (from 994 in 2012)
  - » Satellites launched 2012 — 2016 increased 53% over previous 5 years
    - » Average 144/year
    - » Due mostly to small/very small satellites in LEO (<1200 kg)
  - » Average operational lives of larger (mostly communications) satellites becoming longer, exceeding 15 years; 247 active sats launched before 2002
  - » 520 satellites in GEO (mostly communications)
- 59 countries with operators of at least one satellite (some in regional consortia)
- U.S. entities operate 594 satellites

Prepared by:



Formerly Tauri Group Space and Technology

# Commercial Non-Geostationary Satellites





# Earth Observation (EO) Services



- For many years, global EO services were offered by small number of operators
- New competitors and new partnerships have recently emerged
- Investment driven by interest in business intelligence products from satellite imagery
- Industry maturation
  - » New systems continue to be announced
  - » Acquisitions and mergers
    - Airbus – EADS Astrium (2013)
    - SPOT Image
    - InfoTerra
    - SSTL/DMCii
    - UrtheCast – Elecnor/Deimos (2015)
    - Planet – BlackBridge (2015)

	Operational	Planned	High Res (<1m)	High revisit (<1day)	Sensor Description	System Size	Sat Mass (kg)
Large Sats	Operational		●		Optical and radar	4	1,000
	Operational		●	●	Optical	5	2,800
	Operational		●	●	Radar	1	2,300
	Operational		●		Optical	6	450
	Operational		●		Optical	3	350
Small Satellites (<200 kg)	Planned		●	●	Optical and radar	24	1,400
	Planned		●	●	Optical	30	20
	Planned		●	●	Optical	50	95
	Operational		●	●	Optical	5	150
	Planned			●	Optical	60	50
	Planned			●	Radar	30	TBD
	Planned		●		Radar	4	TBD
	Planned			●	Radio occultation	24	115
	Planned			●	RF mapping	21+	TBD
	Planned			●	Optical	48	24
	Planned		●	●	Radar	50	<100
	Planned			●	Radio occultation	12	22
	Planned		●	●	Optical	10	TBD
	Operational			●	Optical	100+	3
	Planned		●	●	Optical	25+	35
	Operational				Radio occultation	50	3
	Operational			●	Optical	24	120

- *UrtheCast operates cameras aboard ISS and acquired assets from Elecnor Deimos, but is also planning to deploy optical and radar satellites*
- *exactEarth/Harris features hosted payloads, rather than dedicated satellites*
- *Criteria for inclusion are satellites on orbit, announced funding, signed launch contract/agreement, or NOAA license*

# Areas of Interest – U.S. Commercial Remote Sensing Reforms



- National Space Policy (2010)
  - » Minimize, as much as possible, the regulatory burden for commercial space activities and ensure that the regulatory environment for licensing space activities is timely and responsive
- Commercial Remote Sensing has changed in every way:
  - » Numbers in Orbit
  - » Sensors, Capability
  - » Utility, Integration
  - » Data Provider : Information Services
  - » International Competition



# The Need for Regulatory Reform

## What is Success?



- Predictability in Licensing
  - » Presumption of Approval
  - » Adherence to Timelines
  - » Eliminating retro-active conditions that have immediate and irreversibly negative impact on business operations of licensees
- An Open and Transparent Process
  - » Rationale for Denials or Conditions
  - » Involving the Applicant

# Summary



- Double-digit revenue growth in Commercial Remote Sensing industry globally (2015-2016)
- Ensuring U.S. leadership in Commercial Remote Sensing requires a fundamental shift in approach to its regulation
- Encourage industry growth; bring a multitude of benefits to the U.S. economy and security