



# 2014 Nano/Microsatellite Market Assessment

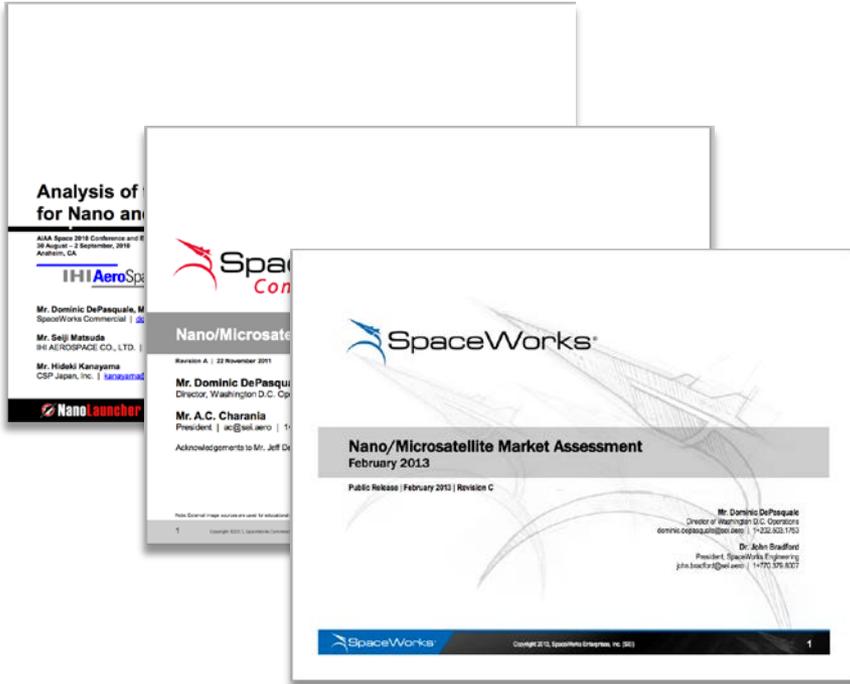
A mid-year update

30 September 2014 | Toronto

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# Overview of Past SEI Nano/Microsatellite Market Assessments



Past Market Assessments: 2010 - 2013

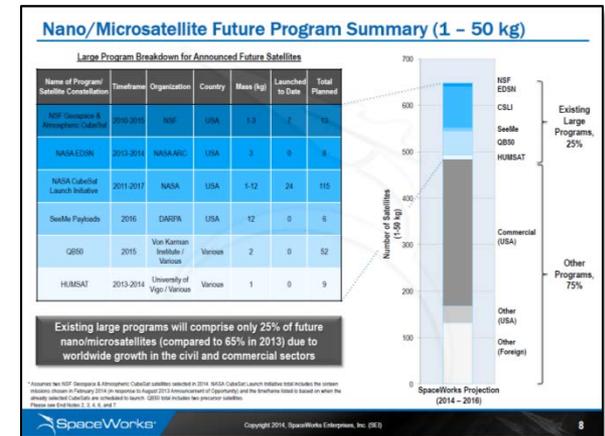


Recent Market Assessment: February 2014

- SpaceWorks has monitored the small satellite industry since 2008 and produced nano/microsatellite market assessments since 2010
- [SpaceWorks hopes to release its next market assessment in 2015](#)

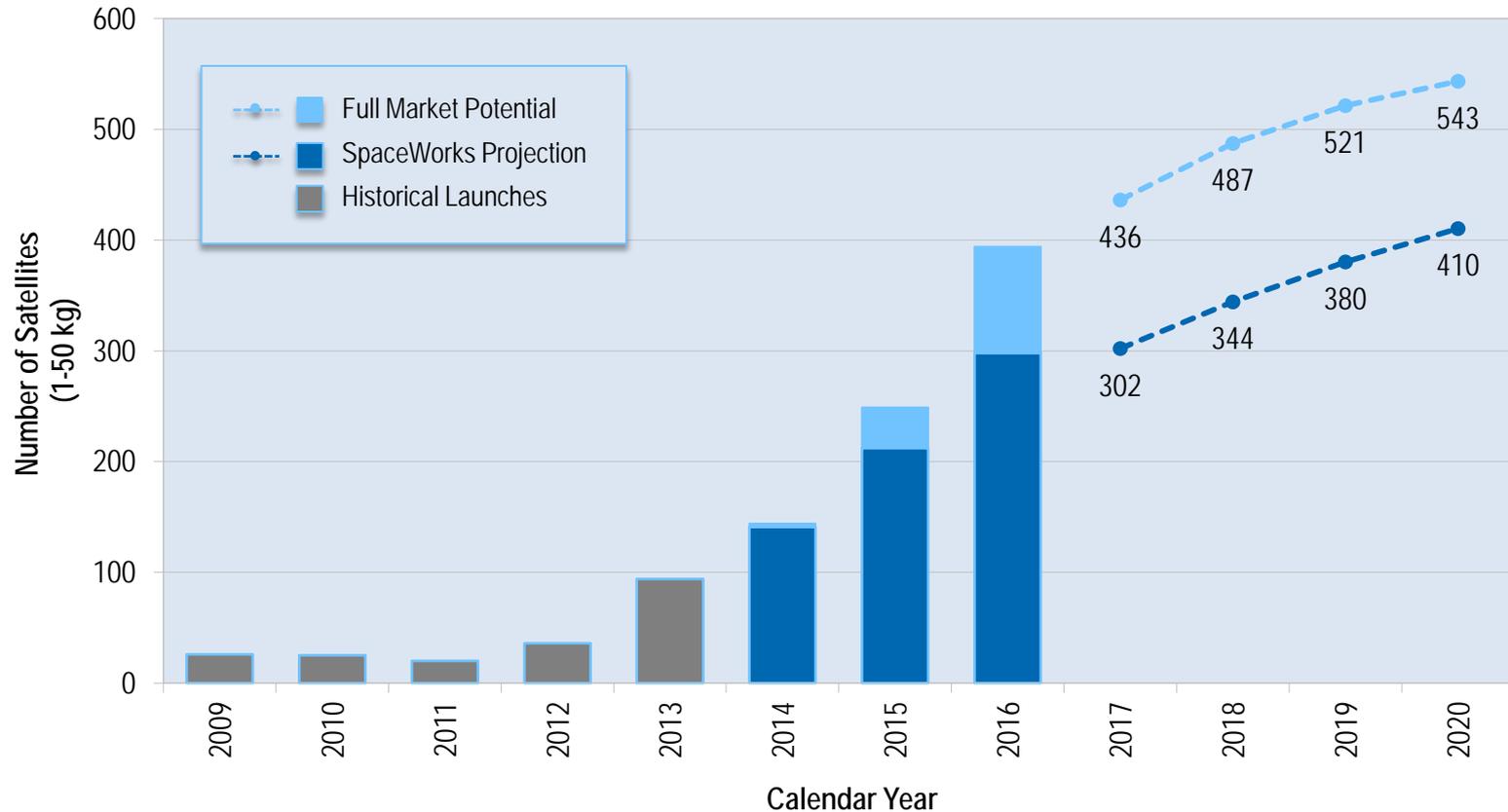
# 2014 Nano/Microsatellite Market Assessment Overview

- SpaceWorks projected global launch demand in the nano/microsatellite market from 2014 to the year 2020
  - SpaceWorks places no value judgment on whether developers will successfully meet their announced launch date
- The data source for this study is the SpaceWorks Satellite Launch Demand Database (LDDDB), a database cataloging historical and future satellite missions
  - Spacecraft masses range from less than 1-kg to over 10,000-kg, with over 3,800 satellites identified
  - Database is continually updated with new project announcements, program cancellations, launch successes (and failures)
- The nano/microsatellite projection was developed from a combination of two data sets
  - Publicly announced projects and programs
  - Quantitative and qualitative adjustments to account for the expected sustainment of current projects and programs, as well as the continued emergence and growth of commercial companies



# Nano/Microsatellite Launch History and Projection (1 - 50 kg)

Projections based on announced and future plans of developers and programs indicate between 2,000 and 2,750 nano/microsatellites will require a launch from 2014 through 2020

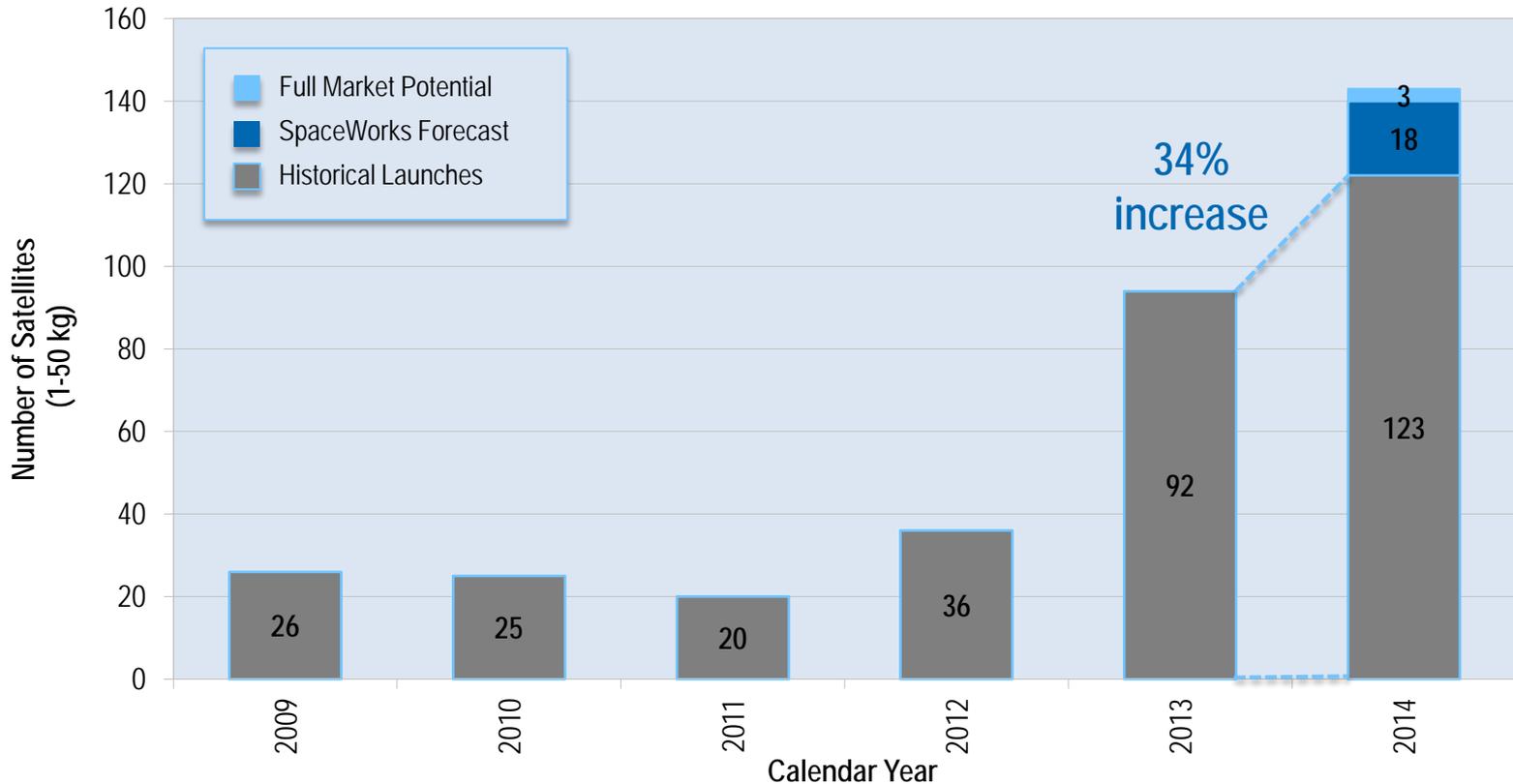


The Full Market Potential dataset is a combination of publically announced launch intentions, market research, and qualitative/quantitative assessments to account for future activities and programs. The SpaceWorks Projection dataset reflects SpaceWorks' estimate of the total number of satellites that will launch in a given year.

\* Please see End Notes 1, 2, 3, 4, and 5.

# 2014 Nano/Microsatellite Launch Progress and Projection (1 – 50 kg)

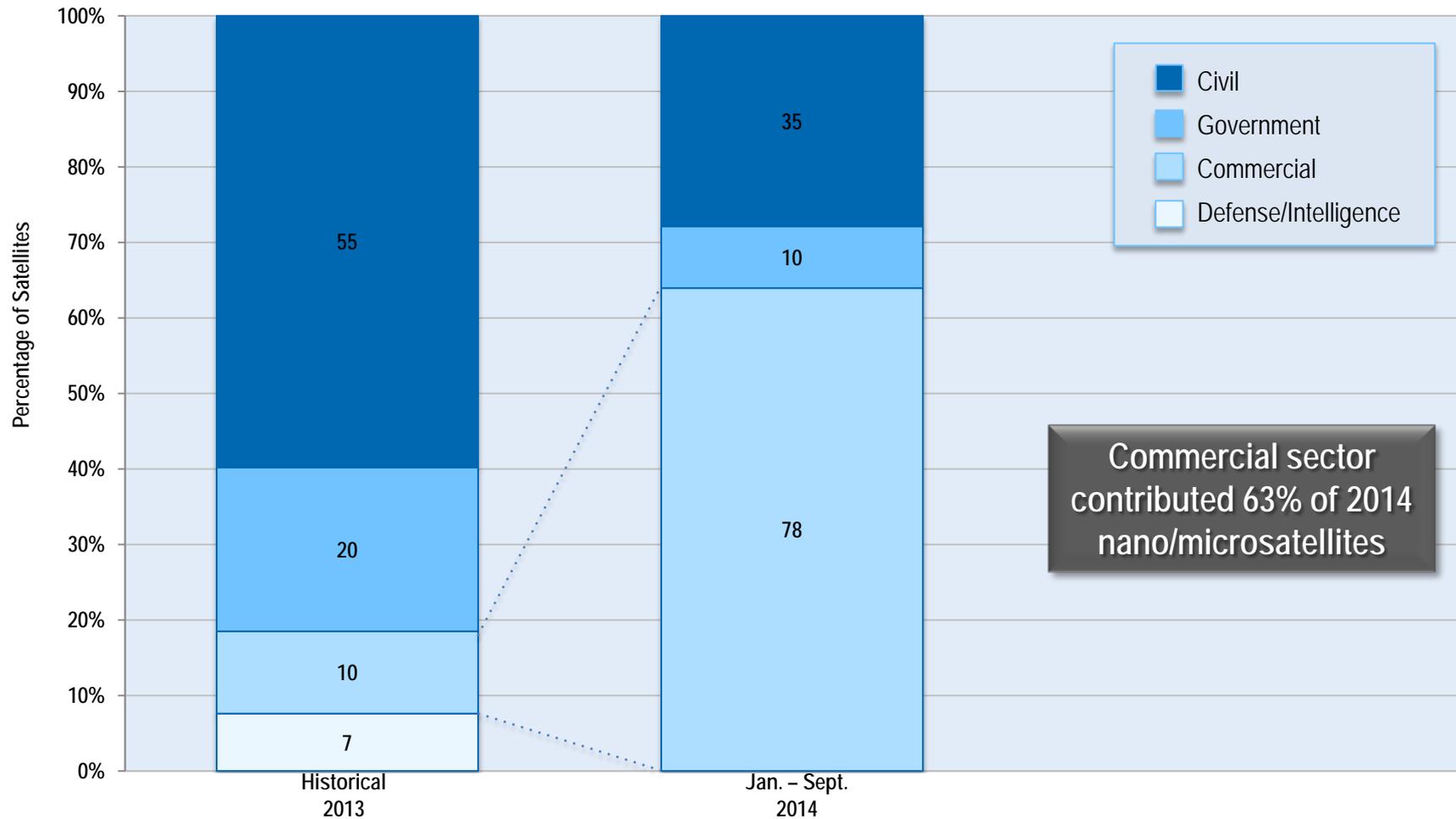
The nano/microsatellite industry continues to thrive, with 123 satellites launched so far this year



The Full Market Potential dataset is a combination of publically announced launch intentions, market research, and qualitative/quantitative assessments to account for future activities and programs. The SpaceWorks Projection dataset reflects SpaceWorks' estimate of the total number of satellites that will launch in a given year.

\* Please see End Notes 1, 2, 3, 4, and 5

# Nano/Microsatellite Trends by Sector (1 - 50 kg)



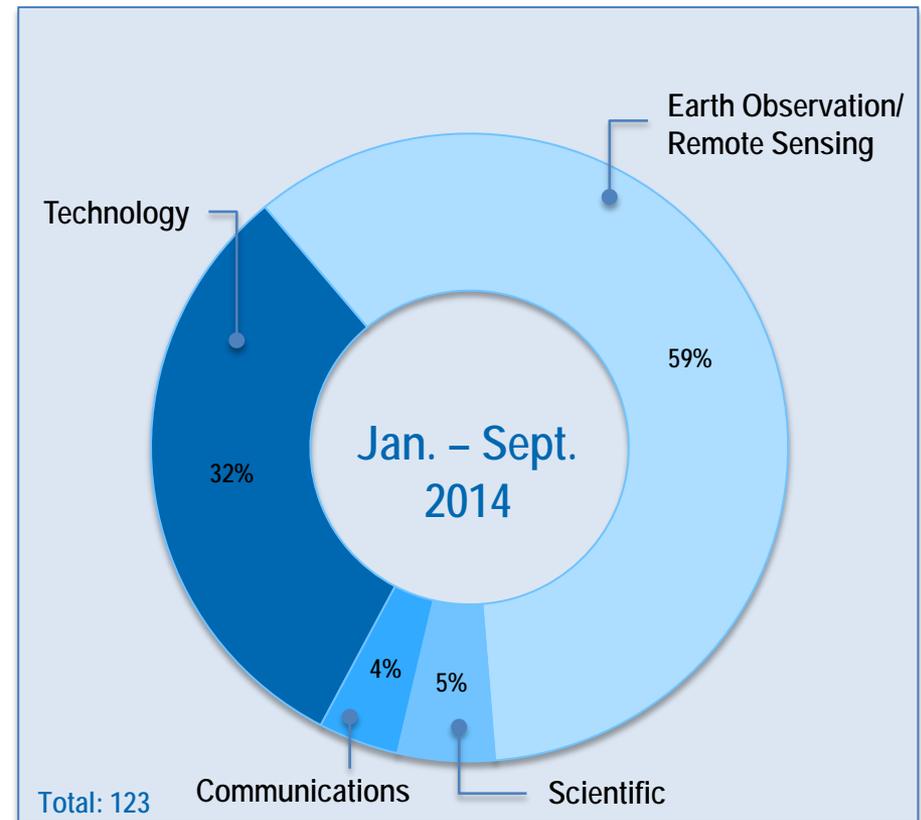
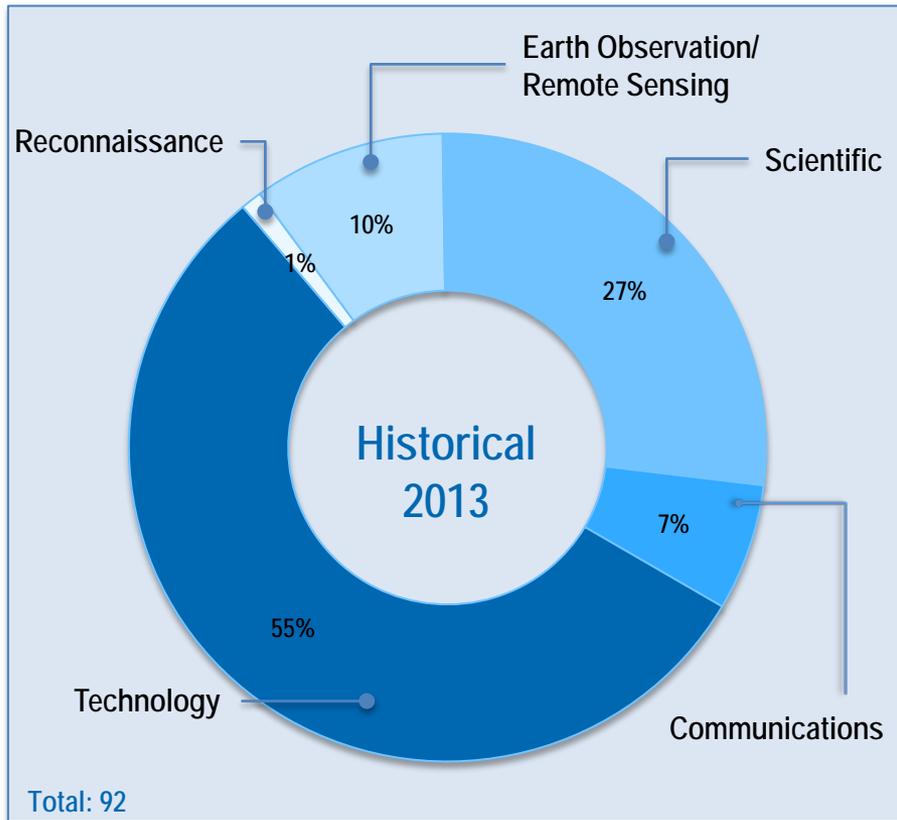
Commercial sector contributed 63% of 2014 nano/microsatellites

The civil sector remains strong, contributing nearly 30% of 2014 nano/microsatellites, but it will see reductions compared to 2013 when the sector contributed 60%

\* Please see End Notes 1, 2, 5, 6, and 7.

# Nano/Microsatellite Trends by Purpose (1 – 50 kg)

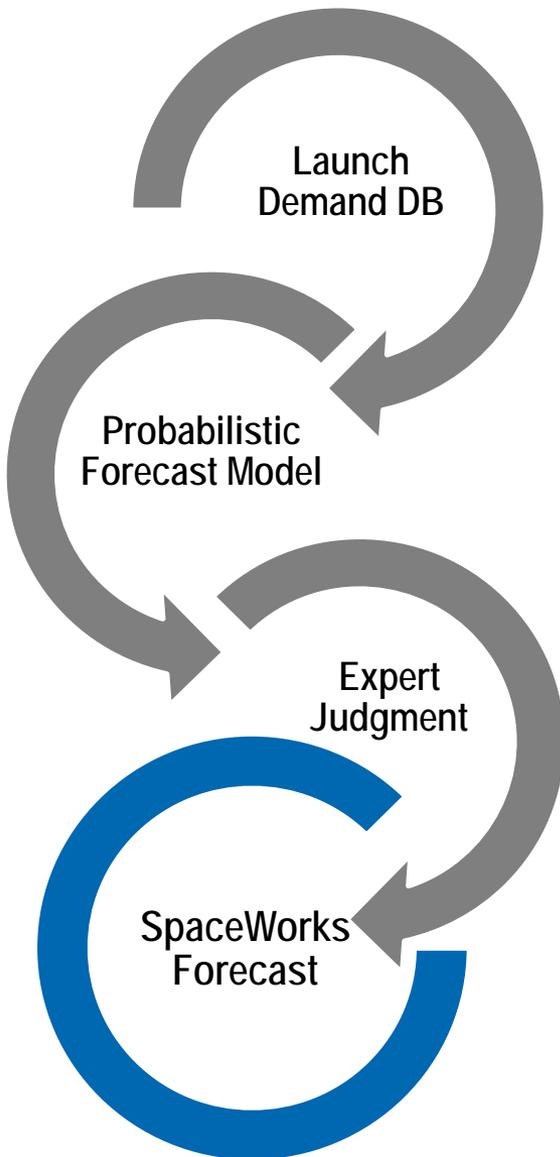
More than half of future nano/microsatellites will be used for Earth observation and remote sensing purposes (compared to 10% in 2013)



A smaller proportion of technology development/demonstration nano/microsatellites will be built in 2014 (32% vs. 55% in 2013)

\* Please see End Notes 1, 2, 5, and 6.

# Nano/Microsatellite Market Forecast Overview



- Previously developed [“2014 Nano/Microsatellite Market Assessment”](#) placed no value judgment on likelihood that developers will successfully meet their announced launch date
- In order to provide an accurate, realistic view of the future nano/microsatellite market, [SpaceWorks will produce a global market forecast by placing value judgment](#) on future spacecraft missions
- The forecast will be developed based on data from the [SpaceWorks Satellite Launch Demand Database \(LDDDB\)](#)
- SpaceWorks Probabilistic Forecast Model (PFM) generates estimates for future spacecraft missions based on historical trends
- PFM results are interpreted and refined using expert knowledge of the industry

# Conclusions

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- Projections based on announced and future plans of developers and programs indicate between 2,000 and 2,750 nano/microsatellites will require a launch in 2020 (compared to 92 in 2013)
- The nano/microsatellite industry continues to thrive, with 123 satellites launched so far this year; SpaceWorks estimates over 140 satellites will launch in 2014
- Commercial sector contributed 63% of 2014 nano/microsatellites and the civil sector contributed nearly 30%; future launches suggest this trend will continue
- 91% of nano/microsatellites launched in 2014 were used for either Earth observation / remote sensing or technology demonstration

SpaceWorks will produce a global market forecast by placing value judgment on future spacecraft missions in upcoming nano/microsatellite market assessments

# SPACE IS GO



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# End Notes

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1. The number of satellites may not equal the number of launches since many small satellites are multiple-manifested (i.e. more than one satellite co-manifested on a particular launch vehicle). Historical data includes failed launch attempts.
2. The data used throughout this presentation (both historical and future) may not represent all global nano/microsatellite activities.
3. The SpaceWorks Projection and Full Market Potential datasets include some known nano/microsatellite programs for which a specific launch date has not been announced. The satellites belonging to these programs are distributed across the period (date range) for launches according to the announced program objectives.
4. Future projections from 2017-2020 are determined by Gompertz logistic curve “best fit” regression with market saturation point (asymptote for number of satellites) set at 525 nano/microsatellites in a year for the SpaceWorks Projection dataset and 580 for the Full Market Potential dataset.
5. The Full Market Potential dataset contains all currently known past and future nano/microsatellites from the SpaceWorks LDDb, with the addition of an inflating factor for known unknowns plus assumed sustainment of certain current projects and programs (e.g. follow-on to NASA Ames EDSN, CubeSat Launch Initiative) and the continued emergence and growth of numerous existing commercial companies. The SpaceWorks Projection dataset reflects SpaceWorks’ estimate of the total number of satellites that will launch in a given year.
6. These graphs are based on the SpaceWorks Projection dataset only, and do not include the additional satellites contained in the Full Market Potential dataset.
7. By some traditional definitions of space industrial sectors, non-defense government space activities are a subsector of the civil sector. Here we break out non-defense government activities into a separate sector. “Government” refers to those nano/microsatellite development efforts that occur within/by the government agency or organization (e.g. NASA, JAXA). Civil refers to all other non-defense development activities (e.g. universities, federally funded research institutions), though the funding source may be a government agency.