

Office of the Chief Technologist Update

NAC Technology, Innovation and
Engineering Subcommittee

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March 29, 2016

Office of the Chief Technologist



➤ **OCT is leading NASA's Integrated Technology Portfolio Management and Strategic Integration. Portfolio Management has 4 elements:**

Roadmaps, Strategic Technology Investment Plan (STIP), NASA Technology Executive Council and TechPort

- Roadmaps cover a wide range of needed technologies and development pathways for the next 20 years. Roadmaps focus on “applied research” and “development” activities.
 - Completed in 2015 with input from NASA centers, outside organizations, industry and government
 - <http://www.nasa.gov/offices/oct/home/roadmaps>
- The STIP is an actionable plan that lays out the strategy for developing essential technologies needed for NASA's mission and achievement of national goals. STIP provides prioritization, guiding principles of investment for technologies identified in Roadmaps
 - Analysis and technology prioritization underway now
 - <http://www.nasa.gov/offices/oct/home/sstip.html>
- TechPort serves as NASA's integrated authoritative technology data source and decision support tool. TechPort supports NASA's technology portfolio analysis, strategic planning and technology management activities.
 - One year beta test complete; NASA seeking public comment about usefulness and accessibility of TechPort to improve user experience and knowledge transfer
 - <http://technport.nasa.gov>



Technology Roadmaps



Technology partnerships



Tech Transfer, Partnerships and
Commercialization Activities

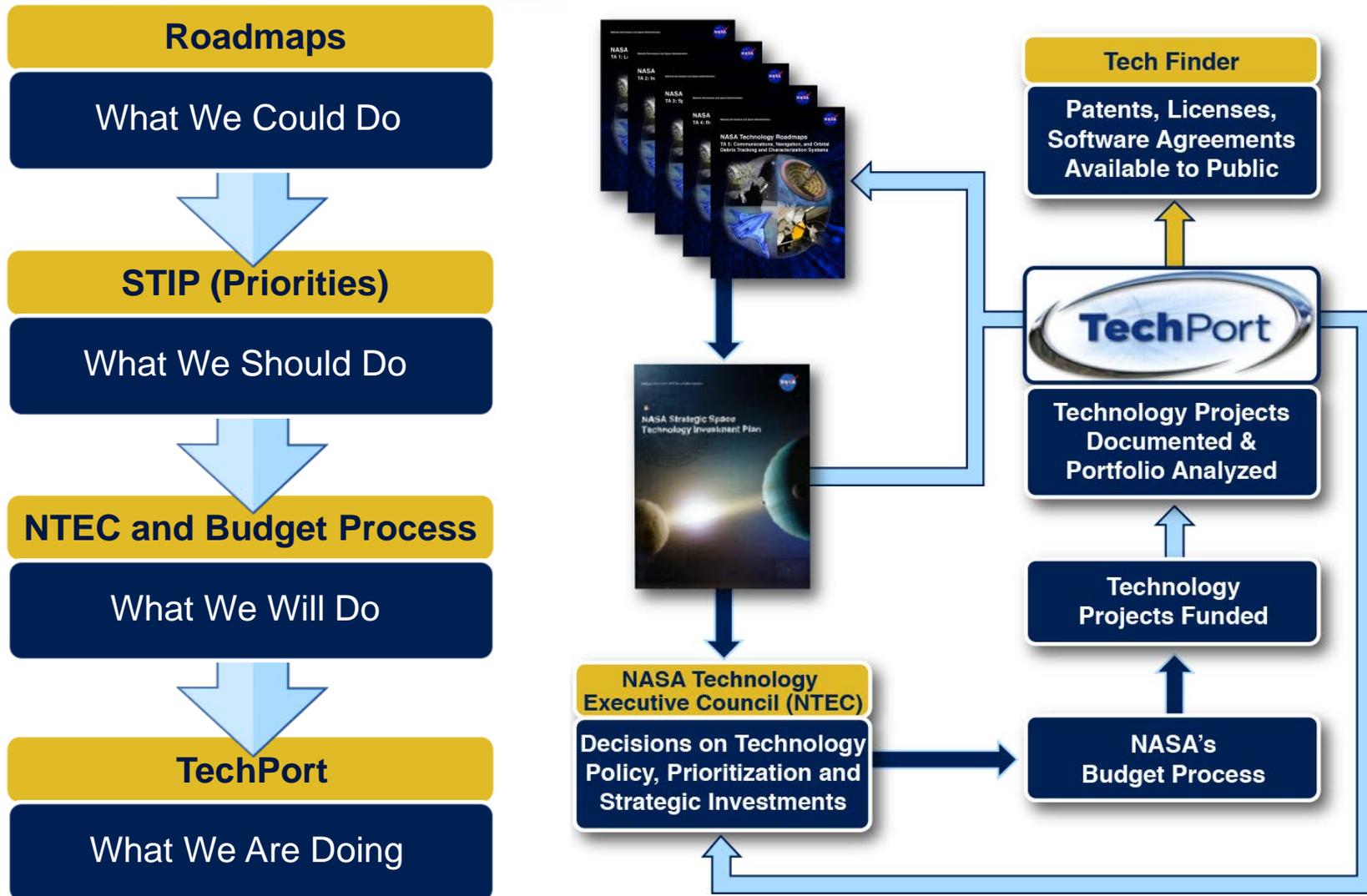
Strategic Technology
Investment Plan



Develop & operate the TechPort
database



Prizes, Competitions and
Grand Challenge





Technology Roadmaps --- Completed July 2015

Considers

- Updates in Science Decadal surveys
- Human Exploration capability work
- Advancements in technology

Includes:

- State-of art
- Capability needs
- Performance goals

Expanded Scope:

- ✓ Aeronautics technology
- ✓ Autonomous systems
- ✓ Avionics
- ✓ Information technology
- ✓ Orbital debris
- ✓ Radiation
- ✓ Space weather

2015 Technology Roadmaps Facts:

340 people contributed (authored content)

This included input from all NASA Centers, organizations, industry and government. Others provided edits during Center and HQ reviews.

The 2015 NASA Technology Roadmaps are comprised of:

- 16 sections
- 15 technology areas
- 2,100 pages
- 1,277 technology candidates

Since the 2012 Roadmaps were released, the 2015 Roadmaps have been expanded to include:

44 new level 3 Space Technology Areas that will be evaluated by the NRC. (Technology Areas: 1, 4, 5, 7, 9, 11, 13, and 14)



NASA Technology Transfer (T2) Program Activity Summary -- FY2015

National Aeronautics and
Space Administration



Identify



120 New Technology Report (NTR) Training Sessions Conducted
4311 Active Contracts with New Technology Clause Tracked
1093 Contracts with New Technology Clause Closed
1552 NTRs Processed and Certified

Protect



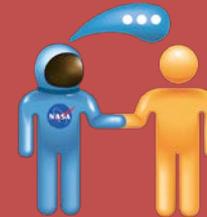
126 U.S. Patent Applications Filed
119 U.S. Provisional Patent Applications
118 U.S. Patents Issued
12 PCT and Foreign Patent Applications
0 Foreign Patents Granted
1144 Active Patents

Market



462 Tech Briefs Published
610 Technology Opportunity Sheets Created
733 Software Catalog Titles Published
196 QuickLaunch Patents Advertised
100K+ Social Media Followers

License



2104 Software Usage Agreements
14 Joint Ownership Agreements
23 New Evaluation Licenses
33 New Commercial Licenses
6 New Licensing Initiatives

Monitor



316 Active Licenses Maintained
\$2,936,123.16 Royalties Collected
52 NASA Spinoff Stories Published
68 Patents Abandoned
14 NASA Technology Transfer System (NTTS) Upgrades

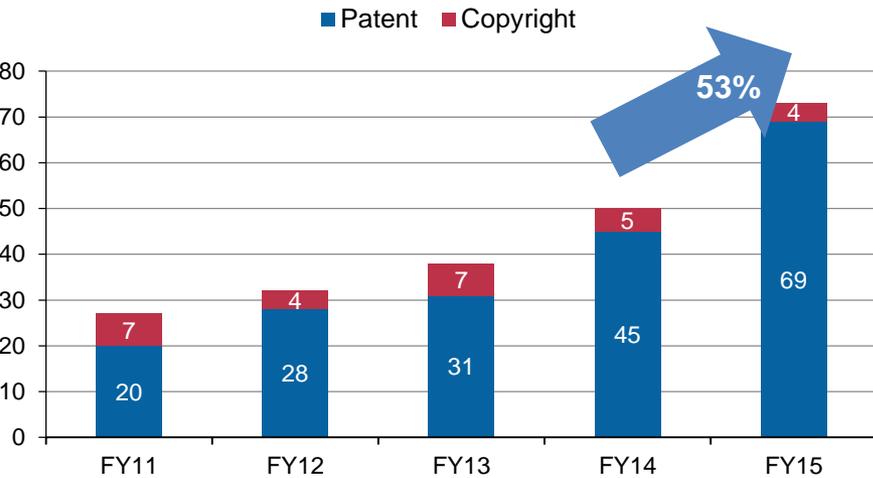


3M T2 Portal Page Views in FY2015
24M Spinoff Website Page Views in FY2015
150K Software Catalog PDF Downloads in FY2015

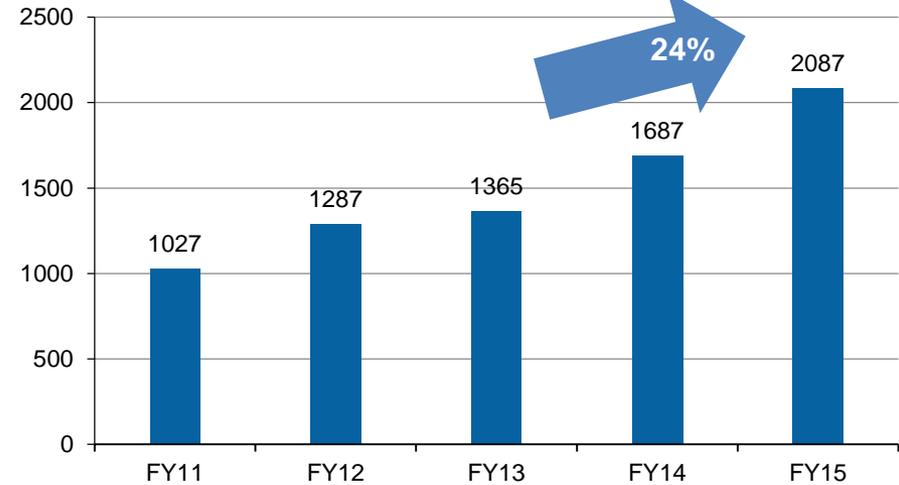
FY 2015 Agency Metrics Highlights



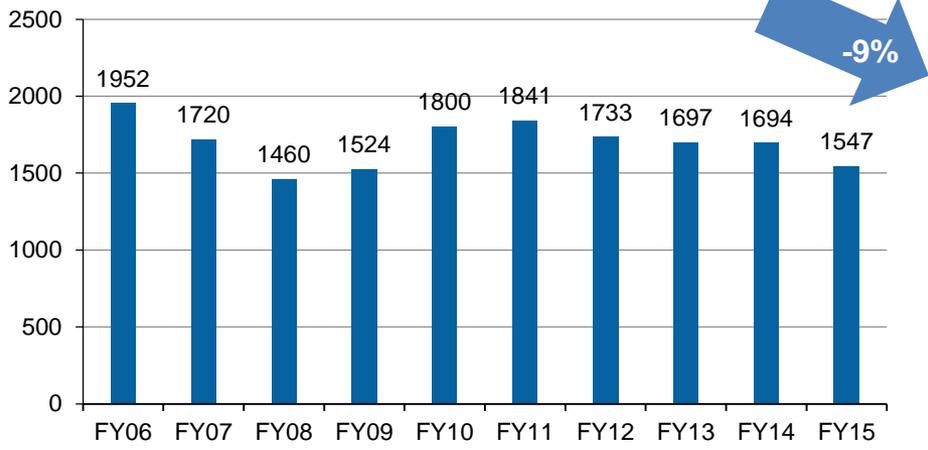
New Licenses Executed (Total)



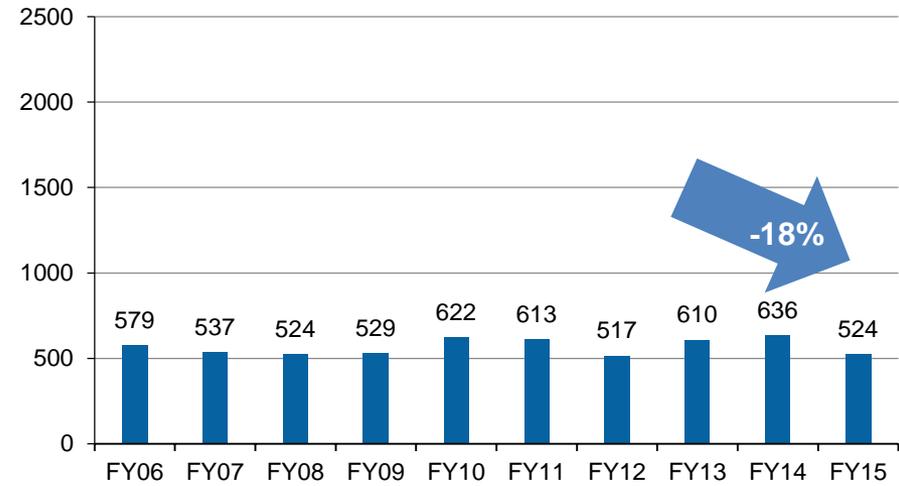
New Software Licenses Executed (Total)



New Technology Reports Disclosed (All Types)



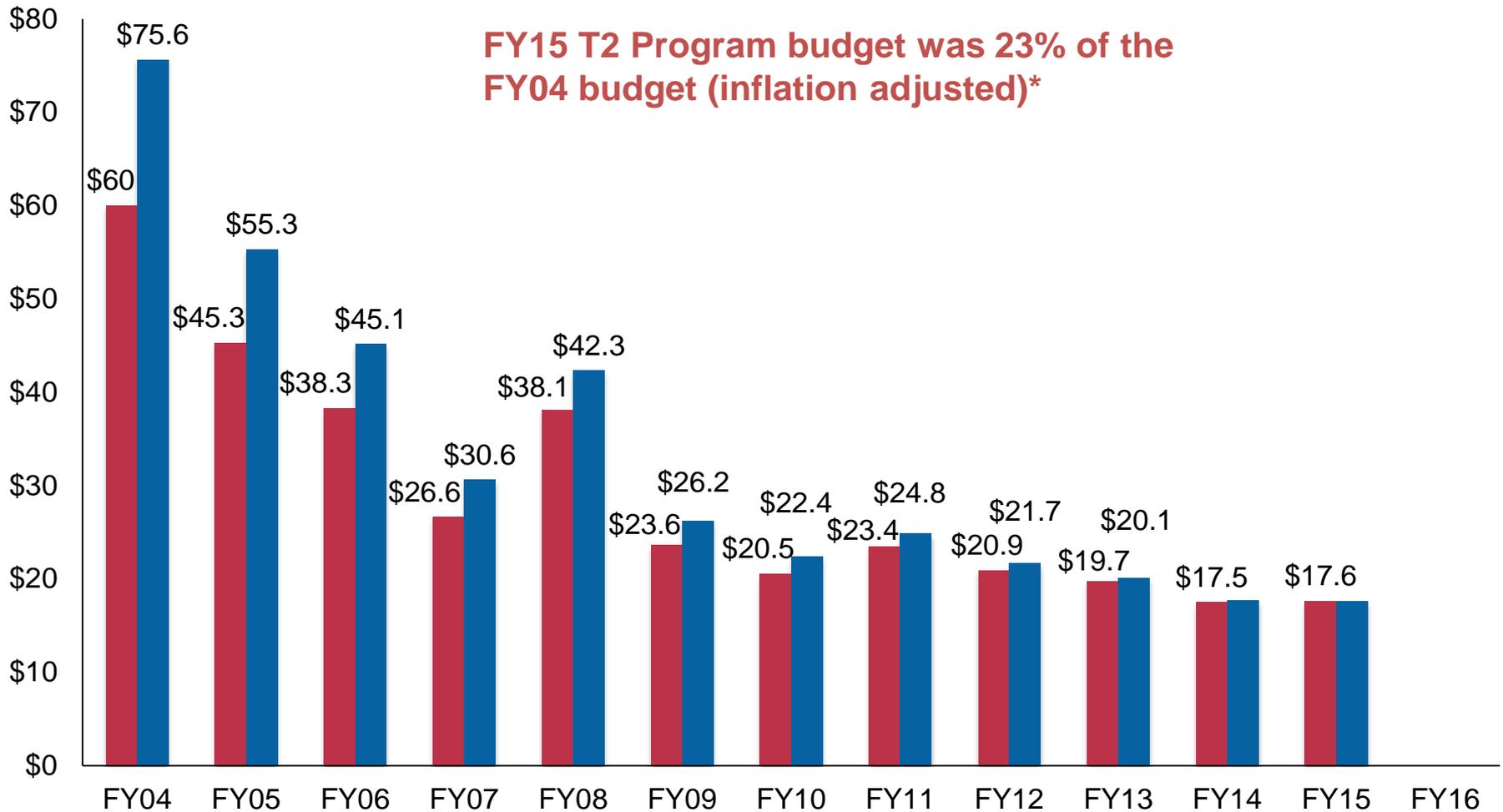
NTRs with C/S Invention Trend



T2 Program Budget History



■ Budget (\$M) ■ Inflated to 2015 Dollars



*Source: Bureau of Labor Statistics CPI Inflation Calculator http://www.bls.gov/data/inflation_calculator.htm



The Road Ahead

- Since 2010, OCT has gone from concept to formulation and a growth-division that created a new Space Technology Mission Directorate.
 - OCT today executes critical agency-level crosscutting technology activities that inform and enable NASA's future missions while addressing national priorities.
 - A NASA Inspector General Report last December reinforced the importance of the work underway and the need to continue to improve upon OCT products.



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The Road Ahead

➤ The NASA Inspector General Report “NASA’s Efforts to Manage its Space Technology Portfolio” (IG-16-008) recommended NASA:

- Prioritize “core” and “adjacent” technologies identified in the Strategic Technology Investment Plan (STIP)
- Ensure the use of TechPort as an agency resource

NASA concurred on these findings. OCT is working with other NASA organizations to implement these recommendations.



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The Road Ahead

- As we move into a presidential election and Executive Branch transition year at NASA, stability and optimization of OCT activities is critical.
- We need to further grow the Space Partnerships S&T Forum.
 - Bring 3 recommendations for inter-Agency strategic collaboration to the May Summit
- We need to build on the successful inter-Agency TIM on TPS.
 - Future topics in robotics, autonomy, etc.
- We need to set the stage for technology as we finish ISS and move to CIS-Lunar



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