Forest Service Update 2016
Remote Sensing Perspective

Tactical Fire Remote Sensing Advisory Committee Meeting
November 3, 2016

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26th TFRSAC Meeting!

- We've had success in a number of areas
  - Unmanned Aircraft Evaluation
  - Aircraft Communications
  - Sensor Development
  - Collaboration between government, both federal and state, academia, international partners and commercial interests.
- Looking ahead
- Current focus areas

But(!) the road has not always been as straight as we thought it might be.

26th TFRSAC Meeting!

The National Remote Sensing Program

The National Remote Sensing Program provides critical subject matter expertise and leadership to a wide range of agency business areas including; Engineering, Fire & Aviation Management, Forest Health Protection, Research and Law Enforcement & Investigations.

Programmatic Activities

- Work closely with Geospatial Center Managers and Program Leads on national remote sensing issues and opportunities. Provide leadership, guidance and support.

- Partnerships – Cultivate internal and external partners on initiatives of mutual interest & benefit

- Continue to work with sponsor areas within the Forest Service to gain a full understanding of remote sensing requirements for critical decision support.

- Provide leadership to regional remote sensing coordinators - Coordinate and moderate special topics calls where appropriate.

Looking ahead - Positives

- New critical position - Assistant Director - Capabilities, Development, & Integration, S&P-WO,Fire & Aviation Management

- Revival of the Fire Imaging Technology Work Group

  – Continued push on multi-mission aircraft proposal

- TFRSAC

  – Continues to meet and serve as a technology forum for the fire / remote sensing community

  – UAS technology is moving forward in the Forest Service

- Support from DoD/IC communities

  – Continued growth and commitment

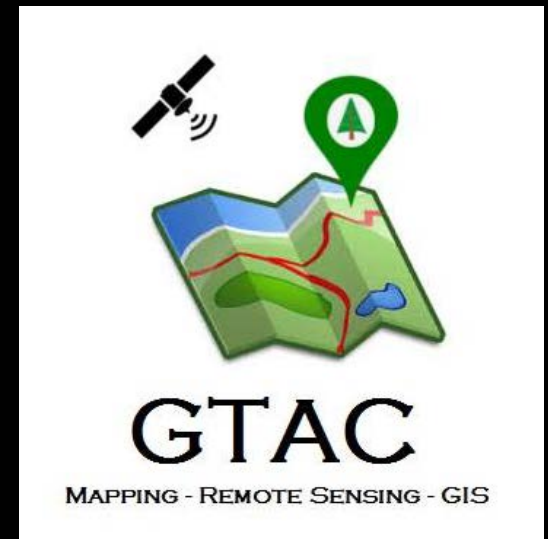- Integration of RSAC & GSTC to form GTAC

Looking ahead - Positives

- Integration of RSAC & GSTC to form GTAC

Looking ahead - Challenges

- Moving GTAC to a new building

- Scanning 21,300 canisters of aerial photography in 4 years

- Reduced funding

  - Impacts to technology evaluation and transfer

  - Impacts to personnel hiring and our ability to travel. Advancing remote sensing science and operational use is highly dependent on meetings, face-to-face, with colleagues, to efficiently build on best practices.

  - No wiggle room in doing the things we need to do, let alone the things we would like to do.

  - Learning to do more with less.

Looking ahead - Challenges

Data Challenges

Analógico

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Digital

Current Focus Areas - Technology

- **UAS** - Fully participate in national conversation on the utility and application of Unmanned Aircraft Systems to support Forest Service mission needs.

- **LIDAR** - Lead discussion and direction on LiDAR contracting, acquisition, training, data management, etc.

- **Multi-mission Aircraft**

- **Sensors** – Space and Airborne / Satellites, Planes and UAS

Technology – UAS Application Areas

- Wildfire
  - Near real-time, high resolution fire detection and characterization
  - Tactical scale imagery and geospatial mapping/visualization products

- Resource Management
  - General remote sensing – hi res imagery, LiDAR and others....
  - Forest inventory
  - Resource mapping (fuels, forest health, etc.)
  - Rangeland Monitoring (grazing permits)

- Law Enforcement & Investigations
  - Detection/mapping of illegal activities on Federal Lands

- Agriculture
  - Huge potential for mapping cropland
  - Other applications

A higher order data collection tool.

Technology

Technology –
Lidar: Light Detection And Ranging

Questions to consider:

- What is Lidar?

- What makes lidar unique?

- Are all lidar data of equal quality?

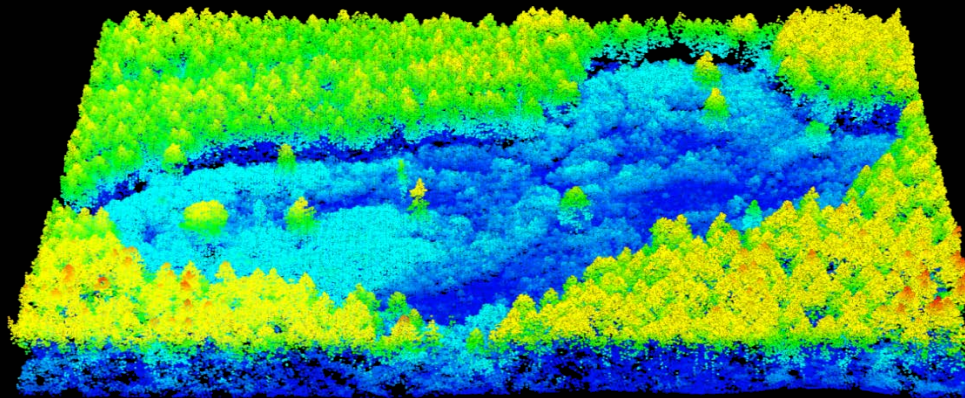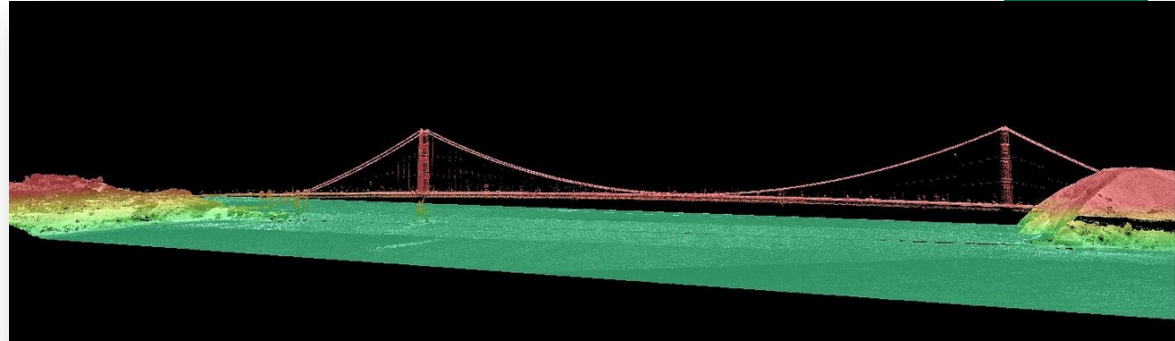- What is the status of lidar in the FS?

- Partnering opportunities and issues…

**Figure 1: a color-coded (by height)** LIDAR image.

+ 3D Elevation Program (3DEP)

Addresses a broad range of critical applications of national significance

The 3D Elevation Program (3DEP) initiative is being developed to respond to growing needs for high-quality topographic data and for a wide range of other three-dimensional representations of the Nation's natural and constructed features.

≊USGS
science for a changing world

The National Map
Your Source for Topographic Information
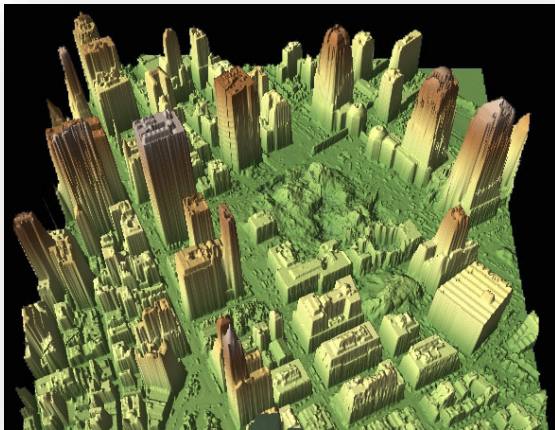
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