The GOES-R science algorithm path from the NOAA/NESDIS science development teams to the NOAA Operational Environmental Systems (OPS) utilizing algorithm patches for rapid change deployment. The Ground System can also deploy full builds (~3 months), patches (~1 month), and emergency patches (~1 week).

### Algorithm Change Process

1. The Calibration/Validation (Cal/Val) teams monitor the algorithms for potential risks and errors.
2. Change requests are proposed at Algorithm Action Review Team (AART) meetings.
3. Cal/Val teams develop and test changes offline using the ATT (Algorithm Test Toolkit) or other tools.
4. A DAP (Delivered Algorithm Package) containing test data and other information is created by the Cal/Val science teams.
5. The DAP is delivered to the GOES-R DE (Development Environment) for further testing.

### DE Unit Test

1. The DAP is retrieved from the CM drobox and checked into Configuration Management (CM)
2. The integrity of the DAP is verified
3. The entire algorithm is built
4. A unit test is performed on the compiled code to test for internal consistency
5. An RPM (Red Hat Package Manager) is created for deployment

### Final Testing

- Tested on DE for a length of time depending on the scope of the algorithm patch
- Tested on ITE for a length of time depending on the scope of the algorithm patch
- Promoted to OE

**Algorithm Review Board (ARB)**
The ARB is responsible for the science of the GOES-R ground system. The ARB reviews the change, completeness of the DAP, and approves the change to go into operations.

**Data Products**

| SUVI L0 and L1b | Aerosol L2+ |
| GLM L0 and L2+ | Clouds L2+ |
| EXIS L0 and L1b | Winds L2+ |
| SEISS L0 and L1b | Fire L2+ |
| MAG L0 and L1b | SST L2+ |
| ABI L0 and L1b | Snow and Ice L2+ |
| Volcanic Ash L2+ | Soundings L2+ |
| DSR/RSR L2+ | LST L2+ |
| Rainrate L2+ | Hurricane Intensity L2+ |

**GS Integrator**
The Algorithm change will go through the WRB process to ensure implementation in the next build.

**Work Request Board (WRB)**
The Algorithm change will go through the WRB process to ensure implementation in the next build.

**Operational Configurational Control Board (OCCB)**
Approves the change for promotion to all 3 environments and to Harris for incorporation into the next build.

**NOAA/OPS**
Deployment immediately via RPM

**NOAA/OPS**
Deployment in next build

**Related Talks and Posters**
Matt Irick, Preparing for GOES-R: Supporting User Readiness of level 1b Data
Wayne Michelmore, Preparing for GOES-R: Supporting User Readiness of L1b Data
Elizabeth Biddle/Chen, Preparing for GOES-R: Post-launch Product and Activities
Kathryne Miretzky, Poster 749, Preparing for GOES-R: Post-launch Product and Activities
Kathryne Miretzky, Poster 768, GRATDAT: A novel approach to monitoring and processing infrared data from GOES-R IR
Elizabeth Biddle/Chen, Poster 734, Preparing for GOES-R: Preparing for GOES-R - Post-launch Data Operations Exercises (DOS)