



Update on GOES-R GEONEX Products and Plans

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GEONEX Product	Algorithm	Current Use	Resolution/Frequency
Fire	Schimdt et al., 2010	GOES/ABI	2km, hourly
Surface Reflectances	MAIAC (Lyapustin et al., 2011)	MODIS/VIIRS	1km, daily
Vegetation Index (NDVI/EVI)	MOD13Q1 (Huete et al., 2002)	MODIS/VIIRS	1km, daily
LAI/FPAR	MOD15A2 (Myneni et al., 2002)	MODIS/VIIRS	1km, daily
Land Surface Temperature	Yu et al., 2010	GOES/ABI	2km, hourly
Solar Radiation	HIMAWARI (Takaneka et al., 2011)	AHI/HIMAWARI	1km, hourly
GPP/NPP	MOD17A2 (Running et al., 1999)	MODIS	1km, hourly/daily/annual
Evapotranspiration	MOD16A2 (Mu et al., 2007)	MODIS	1km, hourly/daily/annual
Phenology	MOD12Q2 (Ganguly et al., 2010)	MODIS/VIIRS	1km, annual
Snow cover	Cline et al., 2010	GOES/ABI	2km, daily

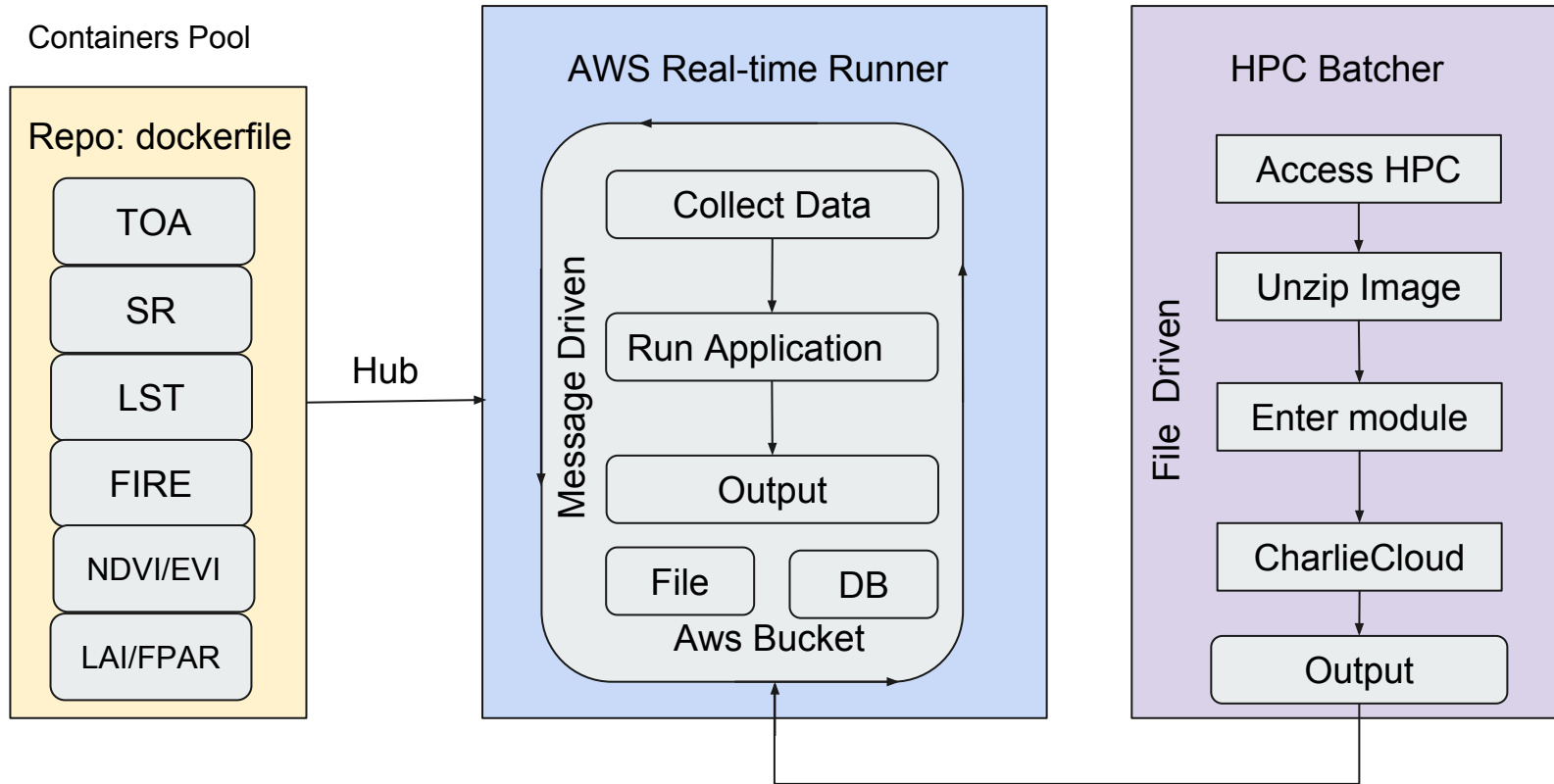
Trial Run
Prototyped
Lab Code
Initial Stage

Google Spreadsheets

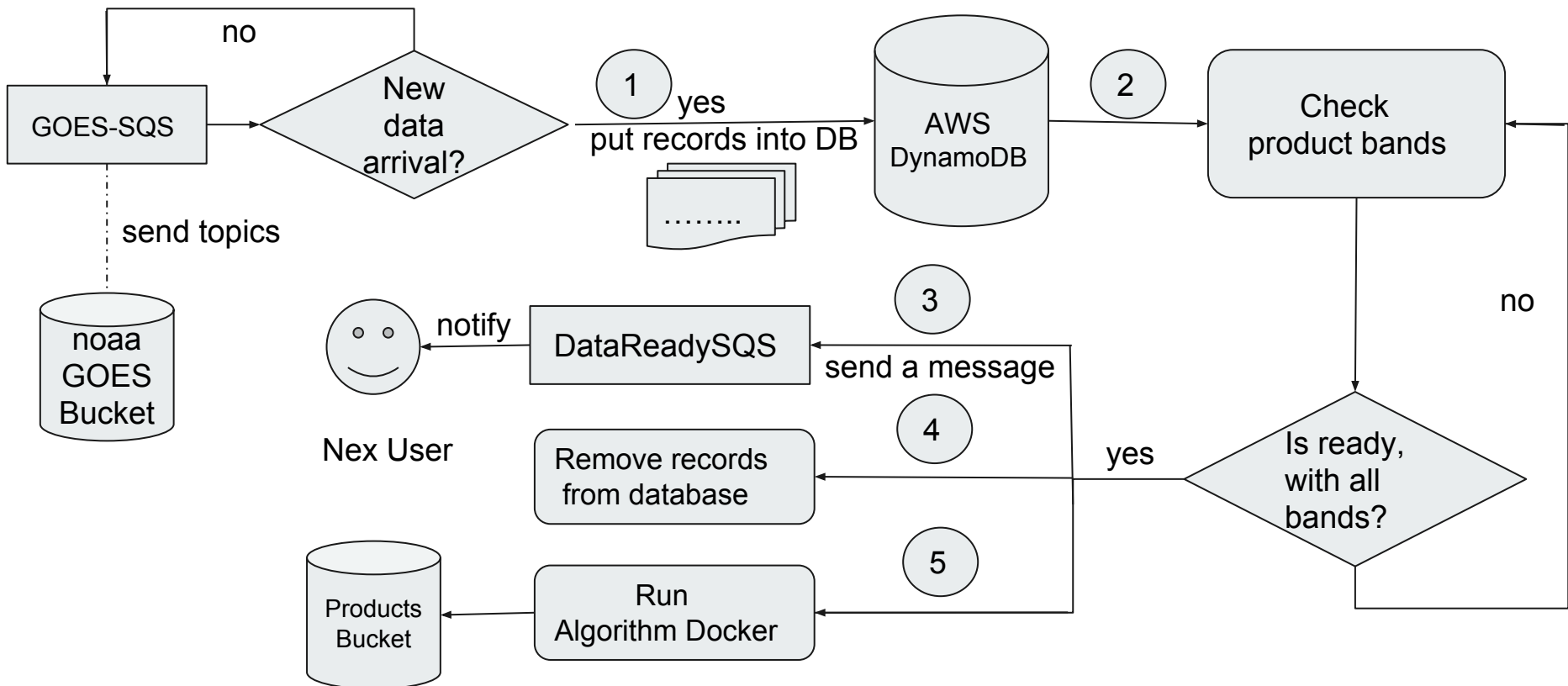
<https://docs.google.com/spreadsheets/d/1xChUvixpB3m-kU7R9SL88kaOosVP8--7FAdWpyB4pLA/edit?usp=sharing>

updated: Nov 2018

GEONEX Algorithm Containers



GEONEX Real-time Runner



RT & Hourly mode (ABI Fire)

Real-time tracking mode Daily Cost $0.904 * 24 = \$21.70$ Monthly Cost $0.904 * 24 * 30 = \$650.88$

- Every 5 minutes products
- Low latency (5 m \pm 10s), dedicated application
- No archive



Hourly monitoring mode

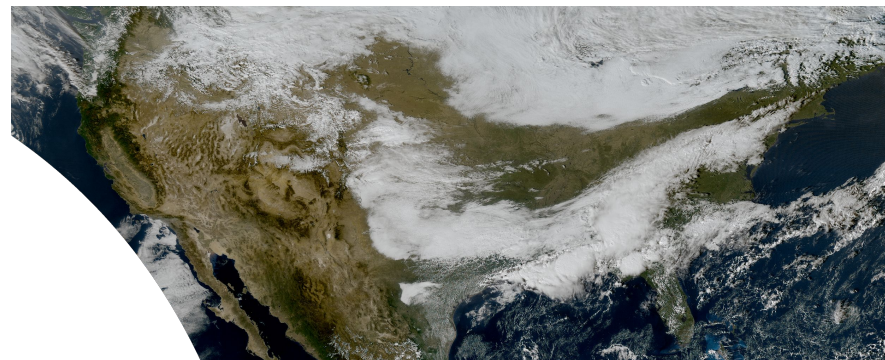
Monthly Cost \$ 449.38

- normal working mode
- hourly products
- processing on precisely geolocation
- 3 month archive on AWS, longer term archive on NAS storage
- can be switched to RT tracking mode on demand

Visualization of GEONEX-Fire on GIBS

GOESR/ABI Fire CONUS Products

- 5-min 6-3-2 Channels False-Color PNG;
- 5-min Fire points vector file in GeoJSON format;
- AWS S3 bucket folder for GIBS to pull



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{
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    "coordinates":
      [-117.7912283628853, 52.86966024997609],
    "type": "Point"},
  "properties": {
    // Core
    "SATELLITE": "GOES16",
    "VERSION": "1.5NRT",

    // Styling
    "FRP": "260.55597",
    "CATEGORY": "10",

    // Ancillary
    "ACQ_DATE": "2018-08-15:19:02:29",
    "SIZE": 0,
    "TEMP": "522.02124",
    "SOURCE": "GEONEX" }

  "type": "Feature"}
```

Amazon S3 > geonex / GO16_ABI15

Overview

🔍 Type a prefix and press Enter to search. Press ESC to clear.

📁 Upload 📁 Create folder Download Actions ▾

US West (Oregon) 🌐

Viewing 1 to 299 >

<input type="checkbox"/>	Name 🔍	Last modified 🔍	Size 🔍	Storage class 🔍
<input type="checkbox"/>	GOESR_ABI_CONUS_20182271902296_COLOR.png	Nov 27, 2018 12:52:45 PM GMT-0800	12.5 MB	Standard
<input type="checkbox"/>	GOESR_ABI_CONUS_20182271902296_FIRE.json	Nov 27, 2018 12:51:58 PM GMT-0800	40.5 KB	Standard
<input type="checkbox"/>	GOESR_ABI_CONUS_20183112017162_FIRE.log	Nov 18, 2018 10:11:00 AM GMT-0800	22.0 B	Standard
<input type="checkbox"/>	GOESR_ABI_CONUS_20183112017162_FIRE.nc	Nov 18, 2018 10:11:01 AM GMT-0800	10.6 MB	Standard
<input type="checkbox"/>	GOESR_ABI_CONUS_2018313_1002_18_LAND_FIRE_BL.nc	Nov 20, 2018 9:10:01 AM GMT-0800	10.4 MB	Standard
<input type="checkbox"/>	GOESR_ABI_CONUS_2018313_1007_18_LAND_FIRE_BL.nc	Nov 20, 2018 9:10:05 AM GMT-0800	10.4 MB	Standard
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<input type="checkbox"/>	GOESR_ABI_CONUS_2018313_1042_18_LAND_FIRE_BL.nc	Nov 20, 2018 9:10:20 AM GMT-0800	10.4 MB	Standard
<input type="checkbox"/>	GOESR_ABI_CONUS_2018313_1047_18_LAND_FIRE_BL.nc	Nov 20, 2018 9:10:23 AM GMT-0800	10.4 MB	Standard



“Camp Fire”

started at sunrise on Thursday, November 8, 2018, and was first reported at 6:33 a.m. PST

“Woolsey Fire”

Around 2:24 p.m. PST on November 8, 2018, a fire ignited on the [Santa Susana Field Laboratory](#) from unknown causes



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Special Issue "Land Monitoring from A New Generation of Geostationary Satellites"

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A special issue of *Remote Sensing* (ISSN 2072-4292).

Deadline for manuscript submissions: **30 September 2019**

Share This Special Issue



- Evaluation
 - Inter-comparison between GOESR-FIRE, MODIS/VIIRS Fire products, and local records during selected periods (mid-July to August 2018, November 2018) and longer term.
- Fire Algorithm Enhancement
 - Look forward to working with ABBA science Team
 - construct statistical and recurrent neural network models to reduce false positive detects
- Publication
 - Hybrid Real-time Active Fire Detections from GOES-16/ABI data using Contextual Search and Machine Learning Algorithm
 - Evaluation of the MAIAC derived Himawari AHI surface reflectance product
 - Near-real time 1-km hourly GPP/ET estimation over the CONUS using the methodologies inherited from MODIS algorithms.