

NEAR REAL TIME (NRT) SERVICE

CATEGORY

Product Development
 Product Sales
 Underwriting
 Loss Adjustment
 Claims Handling

DESCRIPTION

With the increase of weather extremes and the pressure on agricultural production it is necessary to have near real time (NRT) monitoring and mapping of agricultural production, vegetation change and environmental conditions within the risk portfolio of the agricultural underwriter.

The availability of NRT data in high to very high resolution allows to respond quickly and accurately to vegetation change with field-level detail and allows agronomists to identify possible issues at early stages to decide on further treatment of the crop with required inputs, and track further crop's vegetation health. By providing an API access, an integration of field imagery into customer's apps, analytics, and workflows is ensured.

NRT data services include high to very high spatial resolution satellite data and derived products. Sentinel mission data can be provided within 2 to 5 days while data from various commercial third-party service providers (e.g. Planet, DigitalGlobe, Airbus, etc.) are available daily. Derived products and services are provided by commercial EO service providers in NRT to date when the satellite image is acquired. NRT information enables detailed insights across regional and local level daily.

The NRT Service is a baseline for all offered services and products in this portfolio providing accurate and timely information, especially for underwriting, loss assessment and claim management.

PRODUCT SPECIFICATIONS

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| Main processing steps | Depending on requested service |
| Input data sources | <u>Optical</u> : HHR and VHR data providers (e.g. Planet, DigitalGlobe, Airbus, etc.) <u>Radar</u> : n.a. <u>Supporting data</u> : n.a. |
| Spatial resolution and coverage | <u>Spatial resolution</u> : 0.3 – 5 m <u>Coverage</u> : Farm level to Regional level <u>Availability</u> : globally available |
| Accuracy / constraints | <u>Thematic accuracy</u> : depending on provided NRT information <u>Spatial accuracy</u> : depending on satellite input data |
| Limitations | Optical satellite data is prone to cloud coverage. Through high temporal resolution and the use of various sensors this impact can be limited. |
| Frequency / timeliness | <u>Frequency</u> : daily <u>Timeliness</u> : near real-time |
| Delivery / output format | <u>Data type</u> : API solution <u>File format</u> : depends on provider |
| Accessibility | Commercially available on demand from EO service providers. |

CHALLENGES ADDRESSED – USE CASE(S)

Underwriting:

- Seasonal portfolio monitoring

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- Online platforms or easy-to-use interfaces integrating various data sources (e.g. vegetation stress, field boundary changes, comparison, etc.)
 - Risk / crop zoning
 - Actual crop health (vegetation)
 - Global/Regional production trends (e.g. monitoring specific crop acreages of surrounding regions/countries)
 - Procure more reinsurance from better insurance practice
 - Information on growing stages is useful to indicate sensitive stages (e.g. flowering) to estimate the impact on the actual yield when a crop is affected by a damage
 - Forecasting tool needed to have flexible pricing for the next time frame
 - Crop calendar and crop practices
 - Regular assessment of risk pricing and product rating

Loss Adjustment:

- Workforce allocation and planning
- Benchmark physical field observations against yield loss detection (e.g. product calibration)
- Risk-mapping against crop's vegetation stages
- Increase credibility of loss adjustment (e.g. show EO data/visualization to support loss adjustment communication to farmer)
- Enhance field survey (better precision with EO data support)
- Detect yield damage at field level
- Assess crop damage at field level
- Distinct field heterogeneity with crop damage

Claims Handling:

- Identification of actual damage size (tons (volume) / ha (area) / price)
 - Quality control assessment of claims before pay-out
 - Fraud detection
 - Obtaining timely, reliable and consistent data to speed-up the indemnity pay-outs
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