Serving Agriculture
Innovative digital solutions for a sustainable and productive Agriculture

DEFENCE AND SPACE
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May 2019
The Power of AIRBUS
AIRBUS
Intelligence
Satellite & HAPS
Constellation
Agriculture needs data

Increase of Earth’s population
Requires increase in agricultural productivity
Monitoring from space has become a truly cost-effective solution for monitoring crop growth & production

- Timeliness
- Accuracy
- Geospatial vision
- Independence & comparability
Airbus DS Intelligence portfolio in the Ag. market

Analytics is the Tool!

- Index-based insurance
- Grassland

- Precision farming
- Verde + soCAP
- New crops

- No Deforestation verification tool
- Starling
- New commodities
Physical description of the crop

Consistent regardless of the sensor

API delivery for easy data fusion

With Verde, we deliver precision agriculture portal providers with analytics for advanced agronomic services
Relative evaluation of the differences in vegetation development

Sensitive to the light conditions, the viewing angle, the sensor

Requires ground measurements calibration to access biomass (synchronized with the images)

Biophysical parameters

Absolute quantification of the biomass and the nitrogen

Independent from the viewing angle, the sensor, and the light conditions conducted through our reflectance modelling

Unnecessary ground measurements
Crop profiles API

**Analytics per field**
- LAI
- Chlorophyl
- fCover

**Deliverables**
- Analytics 2.5m (GeoTIFF float 32)
- Display 2.5m (PNG)
- Stats (JSON)

**Spatial Source**
- Sentinel 2
- Landsat 8
- SPOT 6/7
- Pléiades
  - All you can get
  - Automatic cloud masking

**Licenses**
- Commercial: business use
- R&D: prototype new services, communicate around it
- Free demo
Biophysical Parameters

Composite image performed over 13 days
(1 different colour per day)

Green cover fraction map

0 1
Streamline control costs

Expand to 100% European fields

Monitor fields all along the crop season

With soCAP API, we can plug reliable crop analytics to any tool to support Member States in transitioning from acreage control to fostering sustainable farming.
On-farm consumption  Low value crop  Continuous growth

With Grassland Production Index, we help insurance companies to protect livestock farmers against climate risks.
The rationale behind

- Grass is not considered as a commodity with high value.

- Grasslands are particularly susceptible to climate hazards, can threaten the economic equilibrium of livestock farms.

- In the event of a shortfall in grass production, the farmer must buy forage or even anticipate the sale of animals.

- Because it is mostly consumed on-farm, and because it is continuously growing with several growth cycles in a year, human assessment of a loss can be tricky.
Based on maps characterizing the biophysical properties of vegetation

Absolute
Quantification of plant parameters

Robust
When using different sensors / angles

Independent
Of light conditions

Free
Of ground calibration

Easy and native comparison along time and over extended AOIs
A regular update
Every month

An historical reference
Rooting back to 2003

A monthly and annual production database constitutes the benchmark for determining shortfalls
Monthly local production

- Average production (2003 – 2014)
- Maximum production (2007)
- Minimum production (2005)
- Ongoing production
Mitigate reputational risk
Verify No-Def commitment
Engage & transform the supply chain

With Starling, we provide palm oil stakeholders with unbiased information for a more sustainable procurement.
Starling Components

A basemap
- The reference layer locating forest classes

Monitoring reports
- Updates featuring the evolution of forest cover over time

Summary dashboards
- Regular overviews of all areas monitored by a given customer

In three formats
- PDF
- Digital Copy
- Streaming
### Summary dashboard – Q1 2017

<table>
<thead>
<tr>
<th>State/Country</th>
<th>AOI reference name</th>
<th>Size (ha)</th>
<th>Forest area (ha)</th>
<th>% Forest area</th>
<th>Forest cover change area (ha)</th>
<th>% Forest cover change in forest area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>Aceh Tamiang</td>
<td>221,137</td>
<td>103,741</td>
<td>46.91</td>
<td>9</td>
<td>0.008</td>
</tr>
</tbody>
</table>
Airbus supports a wide number of companies & public authorities in all segments of the industry, whether financial agriculture, institutional, precision agriculture or agro-industry.
Thank you