



STARLING

Reliable, unbiased

FAQs

Version 1.1

July 10, 2017

www.starling-verification.com

Table of content

TABLE OF CONTENT 1

- 1.1 WHAT IS STARLING? 2
- 1.2 WHO IS BEHIND IT? 2
- 1.3 WHEN DOES IT LAUNCH? 2
- 1.4 WHY IS IT NEEDED? 2
- 1.5 WHAT ARE THE BENEFITS OF STARLING? 2
- 1.6 WHO CAN USE STARLING? 3
- 1.7 HOW DOES STARLING WORK? 3
- 1.8 WHY IS STARLING A PRIVATE SERVICE? 3
- 1.9 WHAT IS THE MONITORING FREQUENCY? 4
- 1.10 HOW MUCH DOES IT COST? 4
- 1.11 HOW RELIABLE IS STARLING? 4
- 1.12 CAN STARLING BE USED FOR ANY COMMODITY? 4
- 1.13 CAN STARLING BE USED IN NON-SEGREGATED SUPPLY CHAINS? 4
- 1.14 CAN IT BE USED IN ANY REGIONS? 4
- 1.15 WHAT IS THE DATA POLICY SURROUNDING THE STARLING SERVICE? 4
- 1.16 CAN STARLING BE USED FOR HIGH CARBON STOCK (HCS) AND HIGH CONSERVATION VALUES (HCV) MONITORING? 4
- 1.17 IS IT LEGAL TO SURVEY A CONCESSION THAT DOES NOT BELONG TO YOU, OR LAND WHERE GOVERNMENT AUTHORITIES MIGHT BE OPPOSED TO SURVEILLANCE? 4
- 1.18 DOES STARLING ALSO VERIFY NO EXPLOITATION? 5

1.1 What is Starling?

Starling is a service supporting companies in verifying their forest conservation commitments. Starling uses a combination of high-resolution optical and radar satellite imagery to provide unbiased monitoring of forest cover change. It transforms complex geospatial data into easy to use information for: decision making, communication to stakeholders as well as supplier engagement.

1.2 Who is behind it?

Starling is born from a partnership between Airbus, TFT and SarVision.

- Airbus is a pioneer in the space industry. They are responsible for tasking their imaging satellites, pre-processing the imagery and distributing the service worldwide,
- The Forest Trust (TFT) is a global non-profit organization. Their experts work between the boardroom and the field, helping to bring transformation in commodity supply chains, from the biggest brands to smaller producers,
- SarVision is a spin-off from Wageningen University (WUR) based in the Netherlands. They excel in the operational application of radar imagery for environmental and natural resource management.

1.3 When does it launch?

Launched in June 2017, Starling is now commercially available and distributed by Airbus. Until then, Starling had been used by industry leaders Ferrero and Nestlé in a pilot phase for a few months. The current version of Starling addresses the Palm Oil industry. Other commodities can also be addressed on a case by case basis.

1.4 Why is it needed?

In 2014 TFT envisioned a credible and independent method of verifying the implementation of No-Deforestation commitments. Many companies have made ambitious forest conservation commitments but there was no way to be sure that they were being implemented.

- Traditional compliance monitoring relies on ground-based audits, limited in their capacity to access remote areas, see the overall picture and to regularly assess the situation,
- Traceability is only a first step for No-Deforestation implementation,
- Certification standards are sometimes perceived as insufficient,
- Alternative satellite-based solutions are limited in the regularity of their update or in their accuracy.

NGOs have been challenging companies to verify their actions vs. their policies, and take ownership of monitoring what happens in their supply chains. Thanks to Starling, companies can now precisely and regularly self-monitor their impact and compliance in forest conservation.

1.5 What are the benefits of Starling?

Starling stands out as a verification tool for three main characteristics:

- It is an evidence-based service, where the image provides no bias,
- It is private and independent, in order to let companies be in control, choose how they use the information, engage in action and proactively fix the issues,

- It is reliable,
 - o For its unmatched accuracy (very high resolution imagery),
 - o and for the regular surveillance it offers (a mix between optical and radar is used to overcome the persistent cloud cover in key palm oil landscapes).

Starling allows companies to:

- Verify commitments, support decision-making for commodity sourcing and determine how / where to engage,
- Achieve transparency goals towards NGOs, civil society, and governmental bodies
- Independently mitigate reputational risk,
- Differentiate from competition for preferential treatment on the market,
- Engage third parties and stakeholders to transform the industry up and down the value chain.

1.6 Who can use Starling?

Basically, all market players who have set No-Deforestation policies in their operations can leverage Starling to achieve their goals, typically:

- Brands who buy commodities such as palm oil,
- Producers who grow these commodities,
- Traders who collect, refine, buy and sell these commodities,
- Banking sector that funds all actors across the value chain.

Consumer Goods companies such as Ferrero and Nestlé are already using Starling for their palm oil sourcing.

1.7 How does Starling work?

Starling is a monitoring package outlining deforestation areas over commodities production landscapes such as palm oil. It includes:

- A basemap: the reference layer locating forest classes,
- Monitoring reports: updates featuring evolution of the forest cover across time,
- Summary dashboards: regular overviews about all areas monitored by a given customer.

Users are invited to select their area of interest, either perfectly framed to their estates or supply sheds, or over the entire production landscape. They also define the frequency of the updates they want, from yearly to monthly. Upon request, they can trigger a dedicated satellite acquisition in very high resolution.

Starling utilizes Airbus's SPOT constellation of satellites which combine large coverage capabilities with 1.5m resolution. The high-level detail of SPOT imagery helps companies easily distinguish forest from plantations, and identify even small changes in tree coverage (down to one hectare).

SPOT 6 and 7 are complemented by other satellites, including radar Sentinel 1, to overcome the persistent cloud cover in key palm oil landscapes and get the regular surveillance that a No-Deforestation policy requires.

1.8 Why is Starling a private service?

Starling is a private service to allow companies to be in control and choose how they use and share the results. It offers the ability to be the first to be alerted when there is an issue within a given area. It puts organizations in the driving seat to take the actions they see fit in a proactive way.

1.9 What is the monitoring frequency?

Users can define the frequency of their choice between: quarterly, monthly, monthly during the fire season, bi-annually, and yearly. By default, the frequency is set up on a quarterly update. Other frequencies are submitted to technical feasibility and uplift.

1.10 How much does it cost?

Starling is priced per hectare or per landscape. The per hectare pricing is meant for companies wishing to monitor their estates or their supply sheds. The landscape approach should be selected when the company wants to engage themselves in their supply sheds and beyond.

There is a high price incentive to allow companies to easily switch to the landscape approach.

Besides, Starling offers many custom options including: the total number of hectares, the license requires, frequency, etc. which can affect the price. We are happy to provide a quotation, based on your needs.

1.11 How reliable is Starling?

The optical imagery is analysed and processed by Airbus DS. The radar imagery is processed by SarVision. The integration and final results are provided by Airbus. The products are validated to meet the quality target using photo-interpretation. The target for the overall accuracy of the producer's classification is:

- 90% for the basemap,
- 80% for the monitoring reports.

The quality checking is conducted independently using an FAO methodology.

1.12 Can Starling be used for any commodity?

Yes, Starling V1 is being launched for palm oil. Other commodities can be monitored upon request and feasibility analysis. Future product releases will include new commodities.

1.13 Can Starling be used in non-segregated supply chains?

Yes, and it is where it brings more value to users.

1.14 Can it be used in any regions?

To date, Starling is available and ready-to-use over key palm oil landscapes in Malaysia and Indonesia – See specifications for exact location. Any other region can be monitored upon feasibility study.

1.15 What is the data policy surrounding the Starling Service?

Any information provided by a customer of Starling for the purpose of the monitoring strictly belongs to that user. Starling considers this information as confidential and does not disclose it or use it for any other purpose than the one given by the customer.

1.16 Can Starling be used for High Carbon Stock (HCS) and High Conservation Values (HCV) monitoring?

To date, Starling maps can feature HCS and HCV if the user provides them.

1.17 Is it legal to survey a concession that does not belong to you, or land where government authorities might be opposed to surveillance?

Starling respects and applies all regulations surrounding the Earth Observation laws and rights.

1.18 Does Starling also verify No Exploitation?

Currently there is no way to address this with satellite imagery. Starling has developed a network of partners and contacts that can support users in this aspect; in case of interest please contact us.