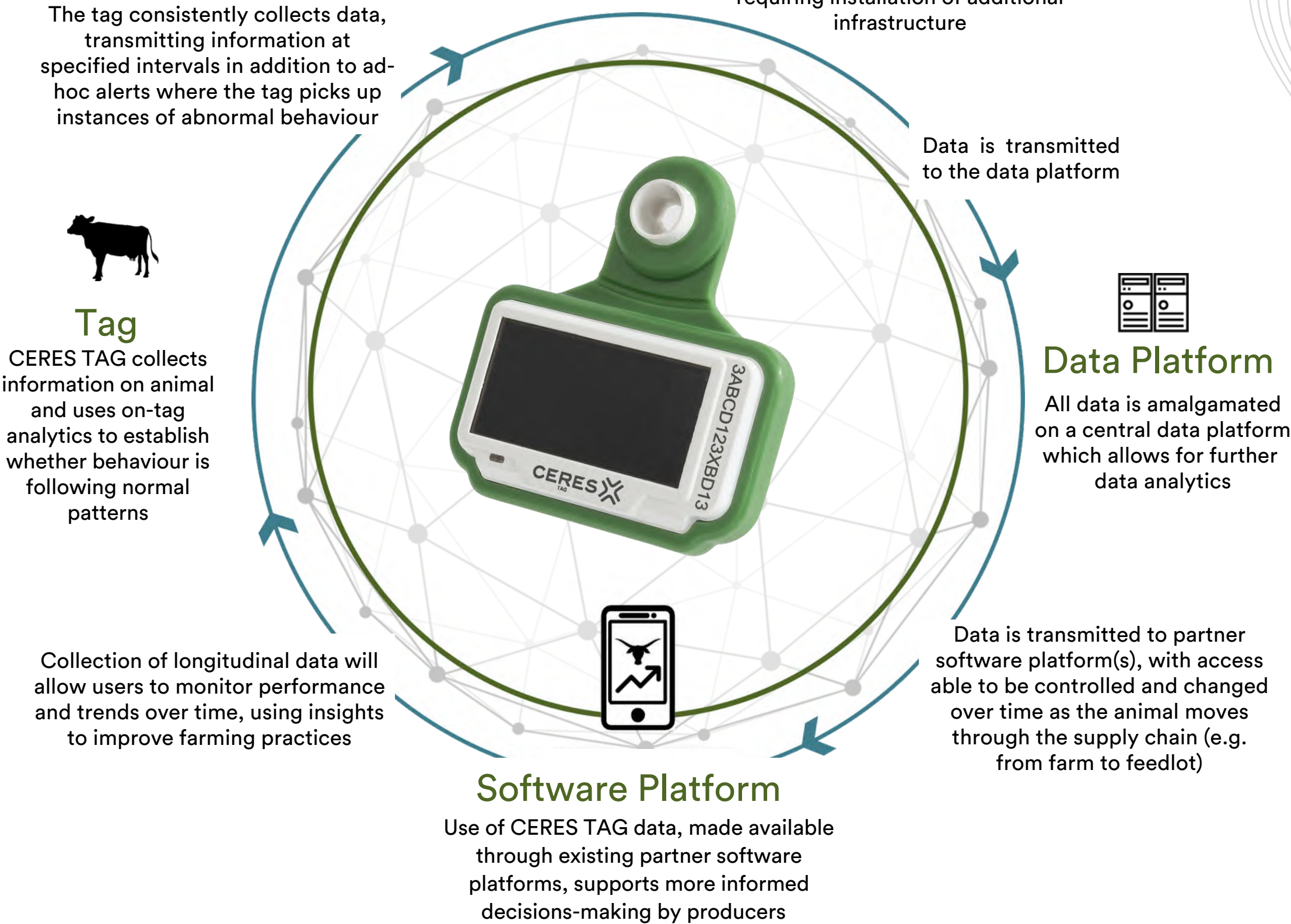# CERES TAG BRAND

Connecting people with animals is the core of our business. This means peace of mind knowing the location, welfare and activity of production animals (livestock) or wildlife (conservation and invasive species).

CERES TAG is the world's first animal monitoring information platform with direct-to-satellite capability through a proprietary smart on-animal sensor. CERES TAG products use data collection and on-tag analytics to provide animal-specific geospatial location data in addition to movement and health monitoring.
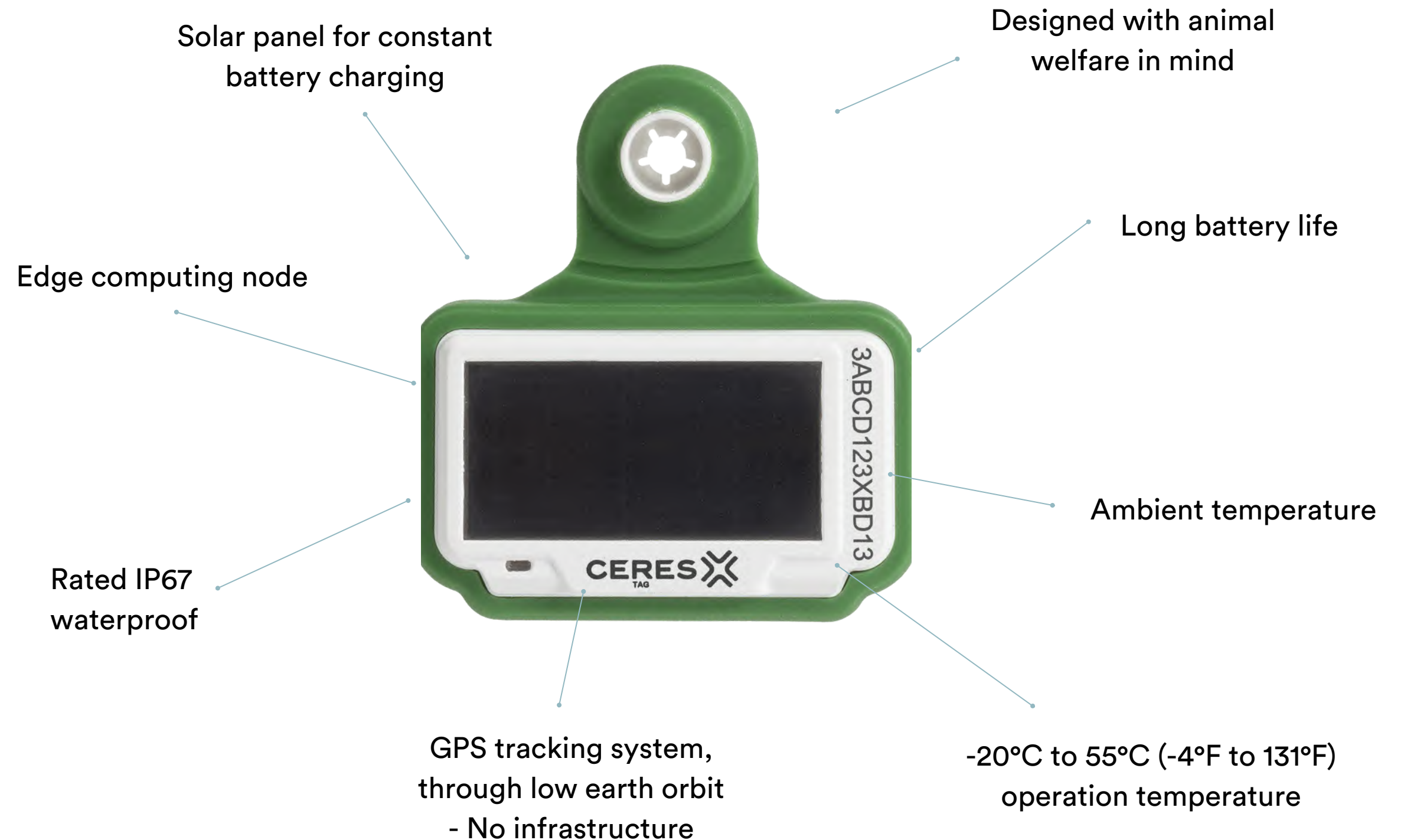
CERES TAG - SYSTEM

CERES TAG systems have been designed to be fully automated. There is minimal input from the user.

Satellite
CERES TAG has partnered with low earth orbit satellite companies which ensures the tag is constantly connected without requiring installation of additional infrastructure

The tag consistently collects data, transmitting information at specified intervals in addition to ad-hoc alerts where the tag picks up instances of abnormal behaviour

Data is transmitted to the data platform

Tag
CERES TAG collects information on animal and uses on-tag analytics to establish whether behaviour is following normal patterns

Data Platform
All data is amalgamated on a central data platform which allows for further data analytics

Collection of longitudinal data will allow users to monitor performance and trends over time, using insights to improve farming practices

Data is transmitted to partner software platform(s), with access able to be controlled and changed over time as the animal moves through the supply chain (e.g. from farm to feedlot)

Software Platform
Use of CERES TAG data, made available through existing partner software platforms, supports more informed decisions-making by producers

FUNCTIONALITY - HARDWARE

CERES TAG products incorporate a GPS tracking system, accelerometer, ambient temperature thermometer, geo-fencing capability, Bluetooth and satellite connectivity.

Solar panel for constant battery charging

Designed with animal welfare in mind

Edge computing node

Long battery life

Ambient temperature

Rated IP67 waterproof

3ABCD123XBD13

CERES TAG

GPS tracking system, through low earth orbit - No infrastructure

-20°C to 55°C (-4°F to 131°F) operation temperature

FUNCTIONALITY - PASTURE FEED INTAKE (PFI)

Following 15 years of research and development and thousands of hours of testing, CERES TAG's Pasture Feed Intake is now available on CERES RANCHER. Along with up to 4 standard data packets, CERES RANCHER will now receive an additional daily summary packet with Pasture Feed Intake information.

With Pasture Feed Intake, customers can see metrics on both an individual animal level and at a herd level. They can view this data as a reflection of the last 24 hrs and also of the previous week. When using the data to impact business performance, Pasture Feed Intake data can help identify animal behaviour trends over time.

FUNCTIONALITY - PASTURE FEED INTAKE

METRIC	REPORTS
Grazing	To the nearest 30 seconds
Resting	To the nearest minute
Ruminating	To the nearest minute
Walking	To the nearest minute
Drinking/Unclassified	To the nearest minute
Dry Matter (Pasture) Intake	In kilograms
Methane Production	In grams emitted

FUNCTIONALITY - PASTURE FEED INTAKE

BENEFITS

Problem Detection
Get instant alerts when abnormal behaviour is detected. For example, if an animal's resting time has increased markedly while walking and grazing times have decreased, that animal may need to be checked.

Genetic Selection
A producer can identify which animals are most efficiently converting pasture to protein to improve genetic selection decisions.

Land Utilisation
Producers will be able to see where animals are spending time grazing and where they are not.

Decision Making
Among many actionable inputs, you can determine when it's time to move your cattle, based on how much time they spend walking for pasture and not consuming.

Deforestation Free
Immutable proof of compliance with Deforestation Free laws.

Carbon Accounting
A producer can provide proof of animal grazing and methane output data to demonstrate improvements achieved through sustainable practices.

FUNCTIONALITY - ALERTS

Receive alerts via your software partner if an animal crosses the predetermined geofence. Animal breakout alerts assist in a number of use cases, including receiving prompt notifications to find and recover livestock theft as well as identifying fences and barriers that require mending.

BOUNDARY BREACHING

- CERES TAG has ensured geofencing is a core capability available through GIS-integrated software platforms. Specifics of the geofence are to be set up within the chosen software.
- Once set, notifications of alerts if an animal leaves the boundary are sent via the software.

ABNORMAL ACTIVITY

- CERES TAG activity monitoring is an algorithm that has been developed utilising the accelerometer in the tag. The accelerometer samples the pattern of behaviour over a rolling 6-day period to determine a base line.
- The tag has immediate alerts for no activity or high activity of the animal. The alerts are sent by the chosen software provider and must be setup within the software.
- No activity may indicate end of life, tag has been dislodged or no longer able to detect movement, indicating a visual check to confirm the status of the animal. The CERES TAG Mortality alert is triggered if no activity has been observed on the tag for a period of 60 minutes. Once triggered, it will continue to send alerts every 12 hours. This alert is in addition to the regular data packets sent throughout the day.
- The CERES TAG high activity alert is triggered if the animal's average activity levels over a 10-minute period greatly exceed their average activity relative to the previous 6-days. Once triggered, it will continue to send this alert every 10 minutes. However, this will stop automatically after 6 hours even if the behaviour continues. This alert is in addition to the regular data packets.
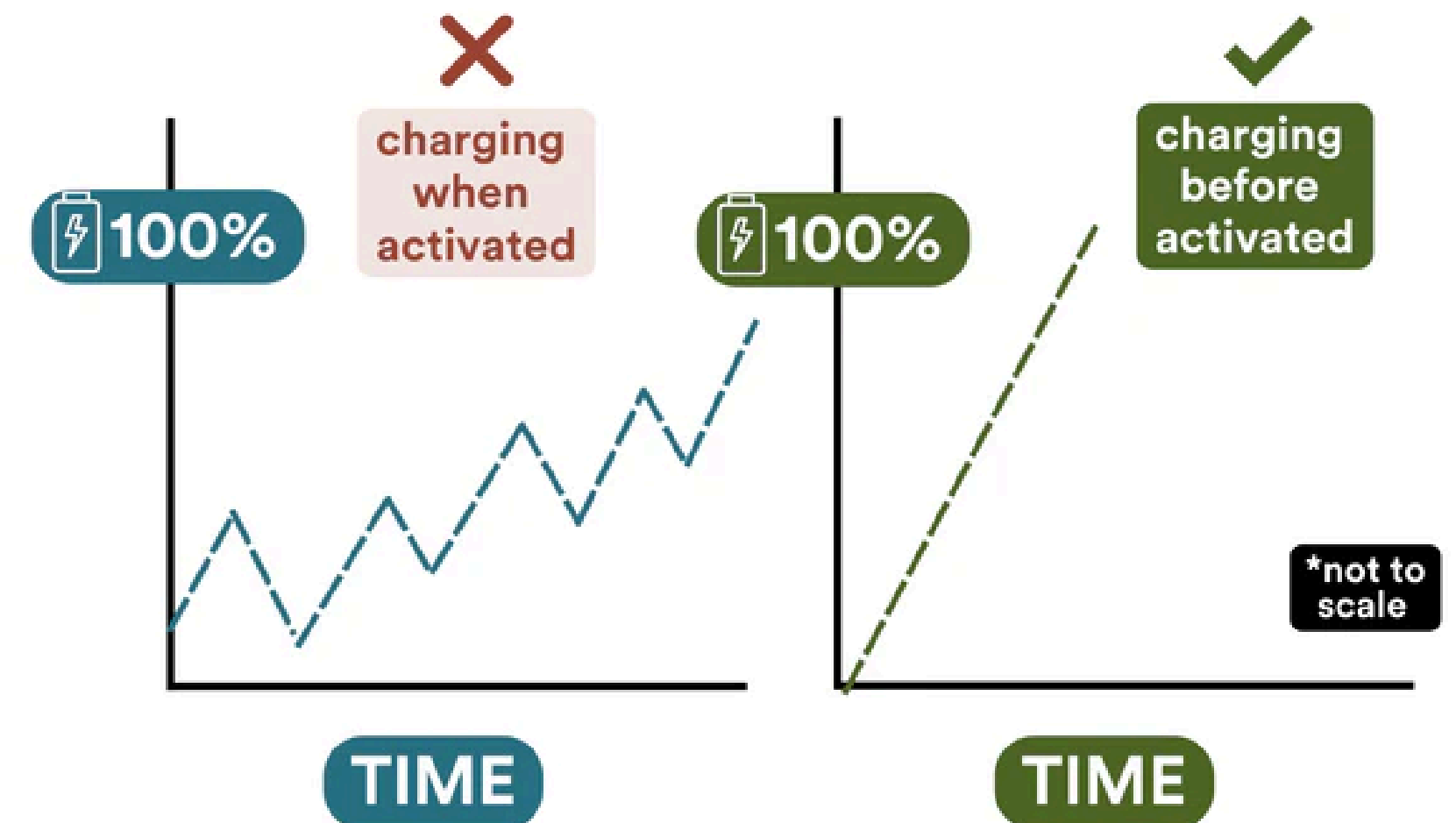
FUNCTIONALITY - SOLAR POWERED BATTERY

- CERES TAG uses solar energy (powered by the solar panel on the primary component) and is managed by a battery algorithm. This algorithm works to conserve energy and battery life span while continuing to transmit data.

- Due to global freight regulations, CERES TAG are shipped with less than 30% battery percentage. We recommend charging tags in the sun for a few days prior to application.

- The tags have been updated with functionality to indicate when the tag is close to optimal battery.

- The tag will flash blue in quick succession when charging commences and flash blue in slow succession to indicate when the tag is close to optimal battery.

- If the tag does not receive enough sunlight to continue functioning, it will remain in hibernation until it receives enough energy to reactivate and continue sending data packets.

FULLY CHARGING TAGS FOR 5 - 7 DAYS IN FULL SUNLIGHT PRIOR TO APPLICATION OR ACTIVATION

WHY IT'S IMPORTANT

✕ charging when activated

🔋 100%

✓ charging before activated

🔋 100%

*not to scale

TIME

TIME

INTEGRATED SOFTWARE PARTNERS

Integrated partners are software partners that have gone through the full integration steps so producers can view their CERES TAG data in their platform.

To view CERES TAG data in their software of choice, producers will need to select their provider in their CERES TAG PORTAL account.

Click the link below to visit our websites for more information.

https://cerestag.com/pages/software-partners

HOW TO APPLY CERES RANCHER

PRECAUTIONS ⚠️

⚠️ Do not use existing ear tag holes. Application of the CERES RANCHER device in these existing holes could lead to ear damage.

⚠️ Secondary components are sharp. Please exercise caution when handling.

⚠️ Use best biosecurity hygiene practices.

⚠️ For CERES RANCHER products only.

⚠️ Once activated the sensor must remain in sunlight and within operating temperatures to maintain optimal use.
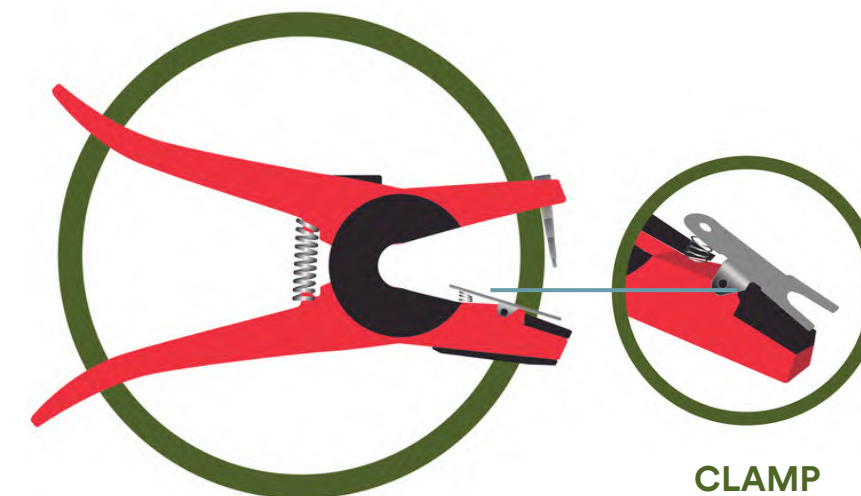
If you have any further queries, please visit our FAQ page **cerestag.com/faq**
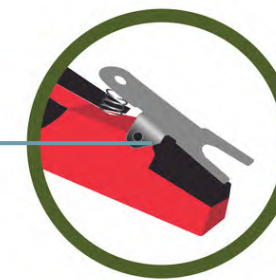
PRODUCT COMPONENTS KEY

PRIMARY COMPONENT

ABCDEF1234567

CERES

SECONDARY COMPONENT

ABCDEF

APPLICATOR

CLAMP

ACTIVATION TOOL

CERES

HOW TO APPLY-CERES RANCHER

Before Application

Getting Started with CERES TAG!
It's as easy as:

- ☑ **REGISTER**
- ☑ **CHARGE**
- ☑ **ACTIVATE**
- ☑ **APPLY**

Before you take your devices out of their packaging, head to https://portal.cerestag.com/register and register tour devices using the QR code on the box
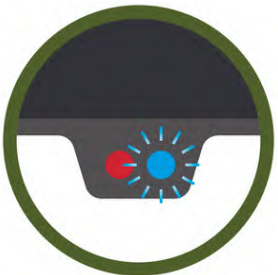
CHARGING THE TAG

BEFORE APPLICATION

CHARGE THE PRIMARY COMPONENT

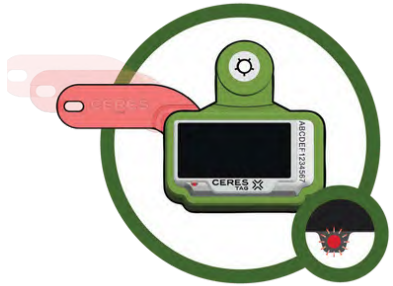**Before activating ensure the CERES RANCHER devices have had sufficient opportunity to charge.**

BEFORE ACTIVATION

CHARGE THE PRIMARY COMPONENT

When the BLUE LED light begins to flash quickly this indicates the tag is charging.

Once charging is complete, the LED will change to a slow flash.

STEP 1

ACTIVATE THE PRIMARY COMPONENT

Use the Activation Tool and hold it flush against the device for at least five (5) seconds.

The RED LED will flash slowly when properly activated.

STEP 2

STERILISE THE SECONDARY COMPONENT

Dip or spray the Secondary Component with antiseptic solution.

Use antiseptic solution at recommended dilution.

Note:
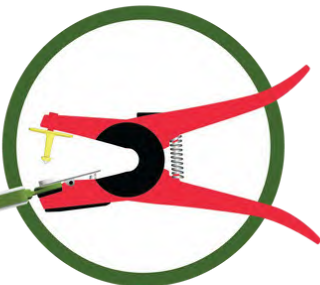Failure to do so may cause irritation.

STEP 3

INSERT THE COMPONENT

Slide Secondary Component onto the Applicator Pin.

Hold down the metal clamp and insert the Tether face down into the Applicator.

Note:
A spare Applicator Pin is located in the handle of the Applicator.

STEP 4

REMOVE OTHER TAGS

Remove all other tags* and ensure there is sufficient space in the ear for the CERES RANCHER.

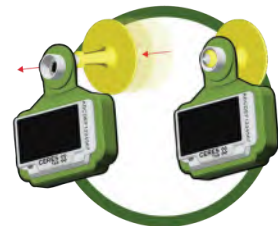*this excludes regulatory tags

STEP 5

PREPARE TO APPLY

Locate the correct position in the upper-middle area of the ear between the two visible cartilage tendons.

Squeeze the Applicator handles firmly until there is an audible click. Then release.

Note:
Solar panels must be facing outwards. Use left or right ear as per regulatory requirements.

IMPORTANT NOTES:

- The device measures / sends data of GPS location, activity and welfare monitoring, ambient temperature and also features alerts.
- Devices to be charged in full sunlight until they slowly flash blue to indicate optimal charging.
- Watch for the red light to indicate successful activation.
- Once devices are activated, the computing node begins to work and consumes battery charge.
- It is important to leave the solar panels exposed to sunlight, especially after activation, even if the devices are not applied to an animal.
- The number of data packets sent is dependent on the battery charge level.
- The battery will go into hibernation mode when at low charge. Once exposed to sunlight transmission will reoccur.
- Not every head of the herd needs to be tagged to receive the benefits of CERES TAG and data.

CERES RANCHER

Primary Component

Solar Panel + Technical Components

Single-use Pin

Applied using CERES TAG applicator

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With CERES RANCHER, monitor your animals and receive updates up to 4 times per day via satellite. CERES RANCHER is redeployable.

Up to 4 data packets per day

3 years of direct-to-satellite connectivity

Solar-powered battery

Operating temperatures from -20°C to +55°C (-4°F to 131°F)

Available in boxes of 10

Applicator Pack

TIMELY ALERTS

Triggered for significant behaviour change which may require investigation or if the animal leaves the boundary.

GPS LOCATION

Know where your animals are and where they've been.

DATA & INSIGHTS

Access valuable and secure insights about your animals on your choice of software.

PLUG & PLAY

Check in on your animals wherever you are in the world, 24/7.
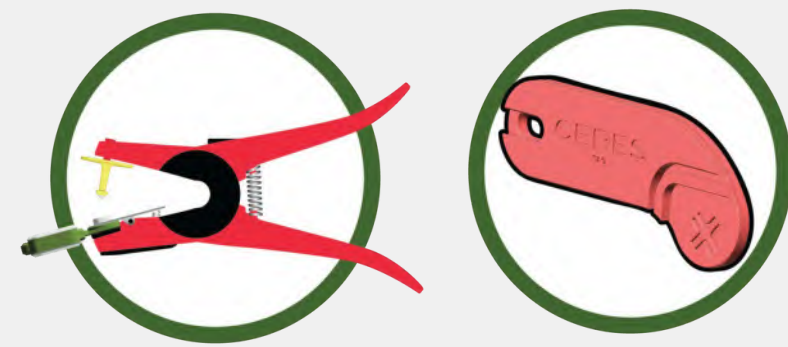
NO TOWERS

No additional infrastructure required.

PFI SUMMARY

Daily metrics on walking, grazing, resting & ruminating to inform decision making.

THE BENEFITS

CERES TAG is the most scalable & lowest cost entry into precision livestock agriculture for traceability and sustainability.

$ Increased Accessibility to Financing and Insurance

Improved Animal Welfare

Animal Health Insights

Alerts of Wandering

Asset Register

Improved Mustering Efficiency

Valuable Data for Carbon Farming

Mitigates Theft

Genetic Selection

Deforestation Free

Improved Pasture Utilisation

Problem Detection

Reporting of Behavioural Traits

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CERES

CERES TAG - FREQUENTLY ASKED QUESTIONS

How long is the satellite connectivity?
CERES RANCHER comes with 3 years of satellite connectivity.

How do I view the data?
CERES TAG does not provide end user software but rather integrates with other software platforms. You can view software options on the CERES TAG software partner page (https://cerestag.com/pages/software-partners). After purchase of the tags, you are required to link your chosen software to the CERES TAG Portal which can be found at cerestag.com. Once linked, the data automatically flows through to the software partner.

How many times per day does the tag transmit data?
CERES RANCHER transmits up to 4 data packets per day. The animal alert data packets are in addition to this.

Connectivity / Internet
The tag uses direct-to-satellite technology. It does not require cellular connectivity to monitor the animals. Your device (mobile, laptop, desktop or tablet) will require connectivity to view the data in your selected software. If you are outside of connectivity and then re-enter connectivity, the software will have the historical data available, including when out of range.

CERES TAG - FREQUENTLY ASKED QUESTIONS

Do I have to tag every animal?
You don't need to tag every animal to get the insights you need! You can tag strategically and benchmark the herd or mob to receive location, behaviour and welfare insights for all animals.

How does CERES TAG work?
CERES TAG is an all-in-one solution to monitor your animals via GPS tracking. The device transmits data directly to low earth orbit (LEO) satellites and is accessed through your existing farm management or animal management software.

How does the device know how much pasture has been eaten?
Pasture Intake is a calculation derived by the measure of time the animal has spent grazing. This calculation is a result of 15 years of research and development and thousands of hours of testing.

Can CERES TAG be used on other species?
CERES TAG can be used on other animals. Currently CERES TAG technology is being used on over 30 different species around the world ranging from cattle to rhino.

CERES TAG - FREQUENTLY ASKED QUESTIONS

Battery & Activation

Activating devices and leaving in a stationary location
Once activated, a device should not be left in a stationary location for an externded period of time. The computing node inside the device is trying to calculate the activity level of the animal, and receving no movement. This may cause unnecessary alerts or diminish the battery levels of the device.

Activating devices before charged
If devices are activated before reaching optimum charge, it will take longer to reach optimal battery level as the tag is working to transmit data and reach optimal battery percentage at the same time. This may result in receiving less than 4 data packets per day to protect the battery.

Battery – Hibernation Mode
If the devices is not exposed to sunlight and the battery goes low charge, it will go into hibernation mode over time and reduce the number of transmits to reserve battery level. Once the battery recharges, transmission will return.

Historical data transmission availability in hibernation
Data packets will not be sent until the battery reaches a sufficient battery level. The historical data not captured during the hibernation period is not available. Data is only sent via satellite and recorded when the battery is sufficiently charged and transmitting.

CERES
TAG

🌐 **cerestag.com**

farmers depot

1-866-527-6229
farmersdepot.ca

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