



Zertrace White Paper.



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In the world of international trade, different types of documents are managed for countless purposes; there are a large number of documents that are required by law or regulation for trade or transactions, while other documents are drafted to form contracts or provide data and important information related to transactions. Many of the problems in this market concern fraud or incorrect use of data and information.

In Zertrace, we focus on this increased need for trust in the market, that's why we created the digital original and smart certificates solution, by using blockchain technology to capture important data in a certificate, we achieve an immutable and flexible solution that can be trusted by all.

Digital transformation

Digitisation is ongoing in all niches of markets. New digital technologies are being adopted at an increasing pace providing valuable efficiency that increases to nations, institutions, authorities, companies, and people and businesses. Digital technologies and innovations can deliver dramatic improvements in competitiveness, performance, operating efficiency, and, increasingly, cost savings. Equally important, they can also strengthen a company's positioning for adverse future events, including economic downturns and digital disruption. Digital enablement is becoming a tool to reach higher product profitability and growth in sales.

According to a Deloitte 2019 Global Cost Survey⁽¹⁾, two of the top lessons learned for effective cost management are:

- We need to invest in technology improvements to enable data availability, reliability, and decision-making processes.**
- We need to design a solid tracking and reporting process .**

Within certification markets, the United Nations Industrial Development Organisation published an article in June 2020 on digitalization in the age of the Fourth Industrial Revolution. This article talked about the need to support developing countries and access to global trade while at the same time the need to keep a robust quality Infrastructure and conformity assessment bodies important role. We need to work on a national and international level, since operating in global markets is becoming increasingly digital.

The article highlights the technologies that pave the way for market transformation, including Artificial Intelligence, drone technologies, blockchain, sensors, and real-time information access.

(1) Save-to-transform as a catalyst for embracing digital disruption, Deloitte's second biennial global cost survey: Cost management practices and trends in Europe, September 2019

Changes in regulation driving digital transformation in the food, agriculture, and organic market

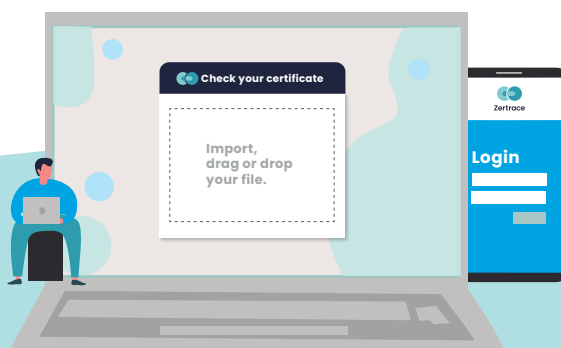
Organic farming is a fast-growing area in EU agriculture, which is a direct result of increased consumer interest in organic products. In response to the challenges posed by this rapid expansion, and in order to provide an effective legal framework for the industry, the EU has passed new legislation. Due to the complexity and importance of secondary legislation under preparation, its entry into force was postponed by one year, from 1 January 2021 to 1 January 2022.

Examples of the changes that will be made under the new organic legislation include:

- **A strengthening of the control system, helping to build further consumer confidence in the EU organics system;**
- **New rules on imported organics to ensure that all organic products sold in the EU are of the same standard;**
- **New rules for producers which will make it easier for smaller farmers to convert to organic production**
- **A greater range of products that can be marketed as organic.**

The new organic legislation will be supported by the action plan for organic production in the EU, launched by the European Commission in March 2021.

Many different initiatives are pushing for digitalisation in the food value chain, including organics in Europe. There are also several blockchain initiatives coming out of, for example, the UK, but also from other countries. In the US, there are a substantial number of farmers who have designed and developed digital tools for their management of crops, audits, and even support for their documentation for certification processes, for example:



- The EU is introducing the **Farm to Fork initiative**
- The **new EU organic legislation** is expected to enter into force on 1 January 2022;
- **TP Organics** is one of the 40 European Technology Platforms (ETP), officially recognised by the European Commission. As an ETP, TP Organics develops research & innovation agendas and roadmaps for research action at EU and national level. Research & Innovation is crucial for developing the organic sector and the design of more sustainable food systems. That is why we advocate for more research funding benefiting organic and agroecological approaches. Furthermore, TP Organics promotes research participation and knowledge exchange between the organic actors.
- The **Organic Farming Information System**, contains a summary of the information that the Member States have entered into the OFIS database according to the current legislation on organic farming consisting of:
 - Ingredient authorisations
 - Control authorities and control bodies in the EU/EEA/CH
 - Control bodies and authorities for equivalence

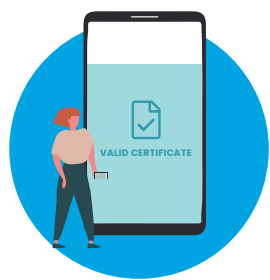
Zertrace partners

Zertrace was established in 2020 as a joint venture between Dynasec B.V. (affiliate of Zertic B.V.) in Eindhoven, Netherlands, and Enigio Time AB in Stockholm, Sweden. EIT Digital Benelux has an ownership stake and has since early 2020 supported the Company financially, with market activities and growth of the innovative venture.

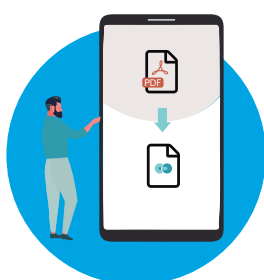
Dynasec/Zertic are experts on certification software and process support for market participants in certification. They offer a software solution for Test, Inspection, Certification, and Accreditation bodies. Dynasec has spent years building a global customer base for their software which introduces efficiency and highly improved workflow in certification. Their software solution easy2certify supports all activities and aspects of certification processes and may be easily adapted for use with different standards. The Company is founded by experts and serial entrepreneurs. For Farmer Groups, an Internal Control System (ICS) software will be launched before year-end 2021 to support the adaptation of new legislation from the EU as described above.

Trace:original from Enigio is a technical solution through which a digital original document can be created, and the original may be freely transferred between parties using distributed ledger technology for the purposes of validation, verification, and recording possession. trace:original is a solution to achieve all properties needed to create, manage, and invalidate a digital document. A certificate created as a digital original document has the same functionality as its paper equivalent but enables faster, safer, and significantly more cost-effective management of these documents and does this in a digital environment. The solution is unique compared to other document management solutions, platforms and distributed ledger solutions as it introduces a new digital information class; the digital document. In summary, the trace:original document is designed to be able to hold all necessary data and at the same time not being tied to any specific infrastructure making the user experience as equivalent to paper document processes as possible. The digital original certificate can be easily and freely managed by anyone with access to a computer and the internet.

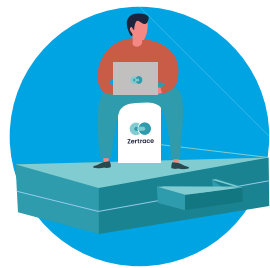
That is why Dynasec/Zertic and Trace:original from Enigio have come together to focus on achieving new digital solutions to existing problems in certification and certificate management to provide secure, immutable, and easily manageable certificates with new tools for user adoption not dependent on the lengthy processes that exist today. The tools that Zertrace brings are;



A mobile app to be used for checking and verification of certificates



An API with a comprehensive toolbox for development



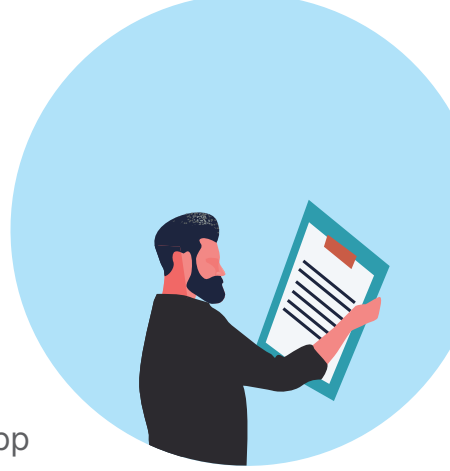
A private portal where Zertrace certificates may be checked, converted, created, and shared



A public portal providing background information in a click

The ultimate goal for the Zertrace partners is to allow for market participants to have access to tools for a much improved complete “Chain of Custody”. This chain of custody verifies the path from the input material to the final product and gives assurance that fiber content claims (like “organically grown” or “recycled”) are accurate as checked by the end purchaser

From early 2020 until the end of 2022 Zertrace focus is on three core Service and Product offerings:



Digital Original Certificates – digital scope certificates and app

Smart Certificates – digital transaction certificates and app

Disculpation Archive – According to the Oxford Dictionary, the word Disculpation means the action or an act of absolving from blame to exonerate. In the context of a Disculpation archive, this means an archive and way of supporting how proof in documents can be gathered, assembled and presented after long periods of time, when needed for proof of a standard or full compliance with certification processes. Today there is no other similar service offering in the market.

What is a scope certificate, and what is a transaction certificate?

- A **Transaction Certificate** is a document issued by a Certification Body that verifies that products or goods being shipped or delivered from one organization to the next conform to a given load and standard.
- **Scoping Certificates** say something about the company, product, or person. Transaction Certificates tell the story of the complete business chain.
- **Transaction certificates differentiate from a scope certificate** which indicates that a Company, a farmer, or a production facility follows a certification standard.
- To verify that any certificate is correct, one needs **to engage with a portal with a certification authority** where one can check and find information and proof that a certificate is valid and correct.
- A Transaction Certificate is normally **requested from the supplier** at the time of purchase. The supplier sends a Transaction Certificate request to its certification body.
- It is very common that suppliers/exporters/sellers are required to provide a Transaction Certificate **for each delivery**.

Certificates for every need.

Scoping Certificates

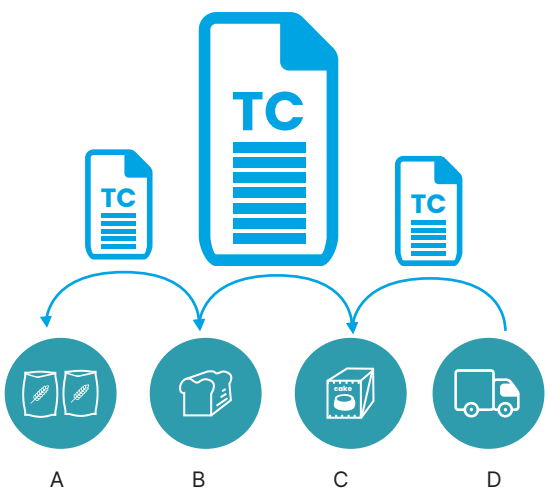
Tell about the certification of a company, product or the person.



All the certificates are part of an immutable disculpation archive.

Transaction Certificates

Tell the story of the complete certified business chain.



All the certificates are part of an immutable Chain of Custody.

If a client, who is a buyer, demands a Transaction Certificate from you as an exporter or seller, you need to apply to a dedicated certification body to receive one, including providing all required documents to the Certification body issuing the Transaction Certificate. This comes with a cost that is different for different providers.

For example, in the textile market for OCS and GOTS certified companies, so-called transaction certificates are obligatory for all OCS/GOTS purchases. These Transaction Certificates confirm that the products of the respective lot have been produced according to the respective standard. The Transaction Certificates for all GOTS/OCS purchases will also be checked during the annual audit.

Transaction Certificates are requested for many other types of goods than textile, for example, for organic produce. Retailers are encouraged to ask for Transaction Certificates for any shipment of certified goods to receive proof that the original raw material was grown, raised, or made according to a standard for certification whether it relates to food, textiles, livestock, or any raw material. In a supply chain, different certificates will be needed for different purposes. An end buyer will require to have proof of full chain of custody through the supply chain, for example, from “farm to store” for organic products, however also applicable for many other areas of markets,

Transaction certificates

The diagram illustrates the flow of transaction certificates (TCs) and source certificates (SCs) through the textile supply chain. It consists of eight stages: SOURCE, FIBER, TRADER, YARN, FABRIC, GARMENT, BRAND, and RETAILER. Each stage is represented by a light blue circle containing a specific icon. Above each stage is a document icon labeled 'TC' (Transaction Certificate), and below each stage is a document icon labeled 'SC' (Source Certificate). Blue arrows show the flow of TCs from one stage to the next, starting from the FIBER stage and ending at the RETAILER stage. A single blue arrow points from the SOURCE stage to its corresponding SC icon. The entire process is framed by a dashed line with circular endpoints at the top and bottom.

SOURCE FIBER TRADER YARN FABRIC GARMENT BRAND RETAILER



The Zertrace market and customer approach.

Zertrace Certificate software empowers systemic trust between operations, business, people, and products. Lengthy, costly, and complex processes are made efficient and immediate with 100% trustworthy validation via Zertrace.

Zertrace is targeting those inspections and certifications in primarily the European market that could or are benefiting from Scoping Certificates as well as Transaction Certificates. Trust in Certificates is declining because of fraud and non-transparency. Certification, in many cases, should guard the welfare of our trade, economic interests, our planet, and its occupants. Checking if services or goods comply with the claimed standard should be practical, affordable, and 100% trustable. The financial and other ramifications for non-compliance from market participants hurts the market in many ways and even on a personal health level. Checking should be:

- **Practical:** Certificate code on paper, pdf, USB-stick, IoT or NFC-sticker
- **Affordable:** No sign-up, non-intrusive (fits your current way of working)
- **Trustable:** blockchain technology-based makes certificates immutable

Zertrace's first outbound target is our services for "Organic" food products in the Agriculture and Food Industry. In the Agriculture and Food Industry, Zertrace has engaged in a pilot with a wide range of interacting parties:

- **Scheme holder**
- **Accreditation party**
- **Certification / Inspection bodies**
- **Farmer groups**
- **Transport & Logistics organization**
- **Supermarkets**

The takeaways on customer challenges and the pilot activities have led to service and product improvements and to have service offerings in line with customer and market participant requirements. Zertrace positions itself in between traditional software providers and blockchain platforms that focus all their activities on a centralized ledger for all events and activities:

	Zertrace	Competition from platforms
Business model	Participant model – transaction fee	Membership model – license fee
Centralized vs. Distributed	Distributed ledger	Centralised ledger
Intrusiveness	Non-intrusive -simple adoption Makes use of existing technology- and organizational infrastructure.	Intrusive Required adaptation of new technology
Access	Only accredited parties can create certificates	A multitude of members can create certificates, without being accredited.
Contracts	Legally valid and binding between interacting participants	Only between the service provider and the client
Incentives	Receive reputational trust-rewards	None
Control	Periodic control of irregularity in transaction patterns	No control
Transparency	Past and current behavior and activities of parties is visible	Only the current situation is visible
Intermediation	In case of possible accusations, Zertrace provides you a legal binding Disculpation archive, one file of all necessary documentation for Disculpation into the future	No legal-binding Disculpation archive

There are many attempts to centralize certification information and processes on a blockchain ledger or through a blockchain technology platform. Such examples may also be found in Trade Finance, Supply Chain finance, and transaction management for many different purposes. Zertrace's focus is to develop and use the most efficient and secure technology for the purposes of our customers. In certification, the primary aim is to provide proof in a certificate that a product, person, etc., is certified and can be trusted. Zertrace, therefore, has focused on the certificate to make sure there is one version of the true, original, and valid certificate in a future-proofed and efficient digital process. We capture the crucial data to supply the trust and proof on a decentralized ledger since we do not yet see the clear benefits of adding all certification process activities and certificates on the blockchain.

In general, centralized blockchains are best suited to use cases where:

- Multiple parties can benefit from sharing data and coordinating processes, but where those parties face a barrier to coordination such as the inability to trust each other and where;
- The services of an intermediary are either challenging to acquire or more expensive than the proposed blockchain solution.



One can easily imagine that a blockchain platform is an ultimate solution for “farm to table” issues with organic food and certifications. The challenges of blockchain platforms are mainly connected to the issue of trust among the participants, and who/which entity will control the platform. The subject or entity that holds the full nodes for the blockchain will have control and influence over who can participate even though the information and data added into the ledger may be entered by the subject who is in control of the data. Both in the physical world and the digital blockchain world, there must be trust.

This is the challenge in the certification market of today in acceptance of a blockchain platform as manager of all certifications and certificates. For certification bodies and accreditation bodies, there are also substantial financial incentives to maintain the status quo and not allow all these business activities to “go on-chain” any time soon. The future may provide other answers.

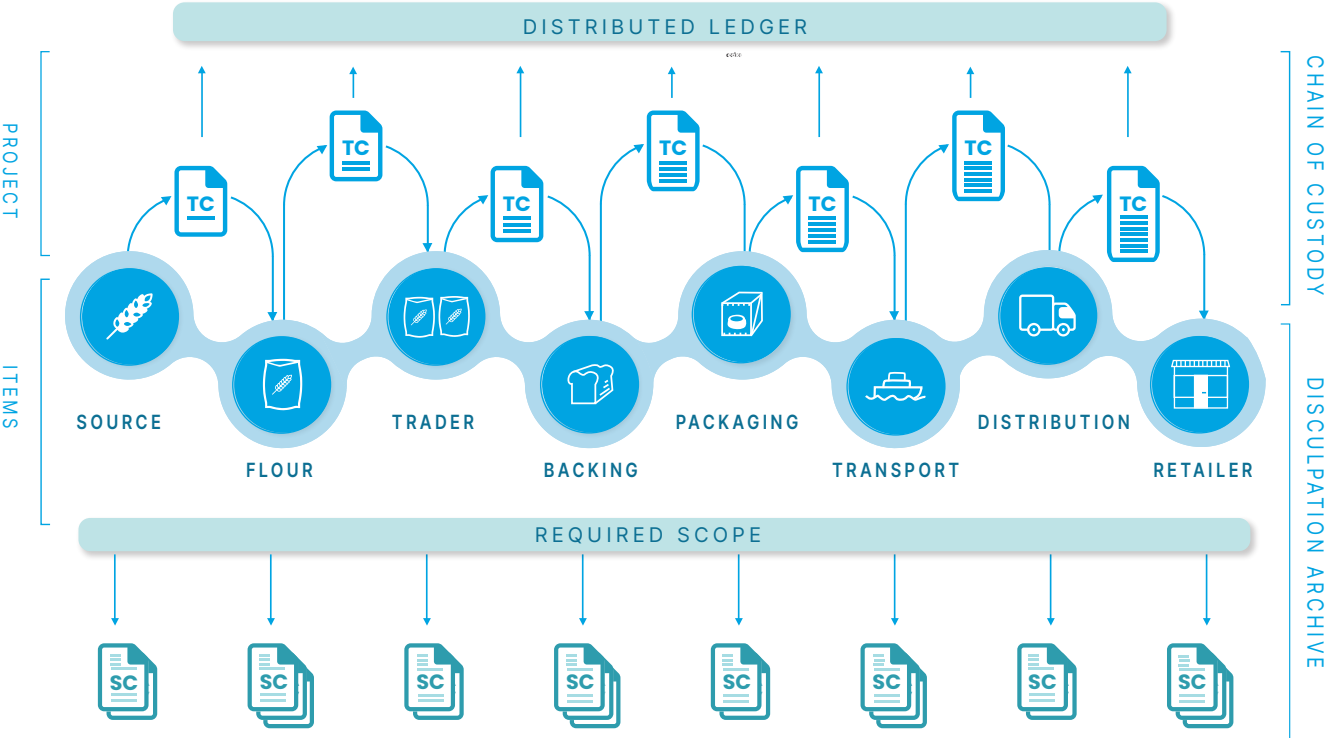
In Zertrace, the team has combined different efficient technologies and technology solutions to support existing processes the way they run today, only to improve and make them faster and more secure. The digital original functionality is based on blockchain technology implemented with user-friendliness in the known process flows and where only the functionalities that blockchain technology provides as improvement is used.

The importance of Chain of Custody

- **Efficiency**
Saving time and resources to verify sources directly
- **Commitment**
Ensuring that you are 'doing what you are saying.'
- **Purchase Assurance**
Ensuring that you are 'getting what you paid for'
- **Creating Synergies**
Developing a common language.
- **Credibility**
Driving real and meaningful change
- **Brand Protection**
Safeguarding reputation and protection against litigation



Chain of Custody for a Pretzel



SC: SCOPING CERTIFICATES

TC: TRANSACTION CERTIFICATES

Chain of Custody is required by buyers of organic and food-agriculture products. It provides them with the confirmation and comfort in acquired products to be sold to consumers. The complexity of the Chain of Custody (many transitions), the combination of ingredients (high complexity), the verification, and growing demand (high volumes) to have full assurance on shipment level makes digitalization of Transaction Certificates a necessity.

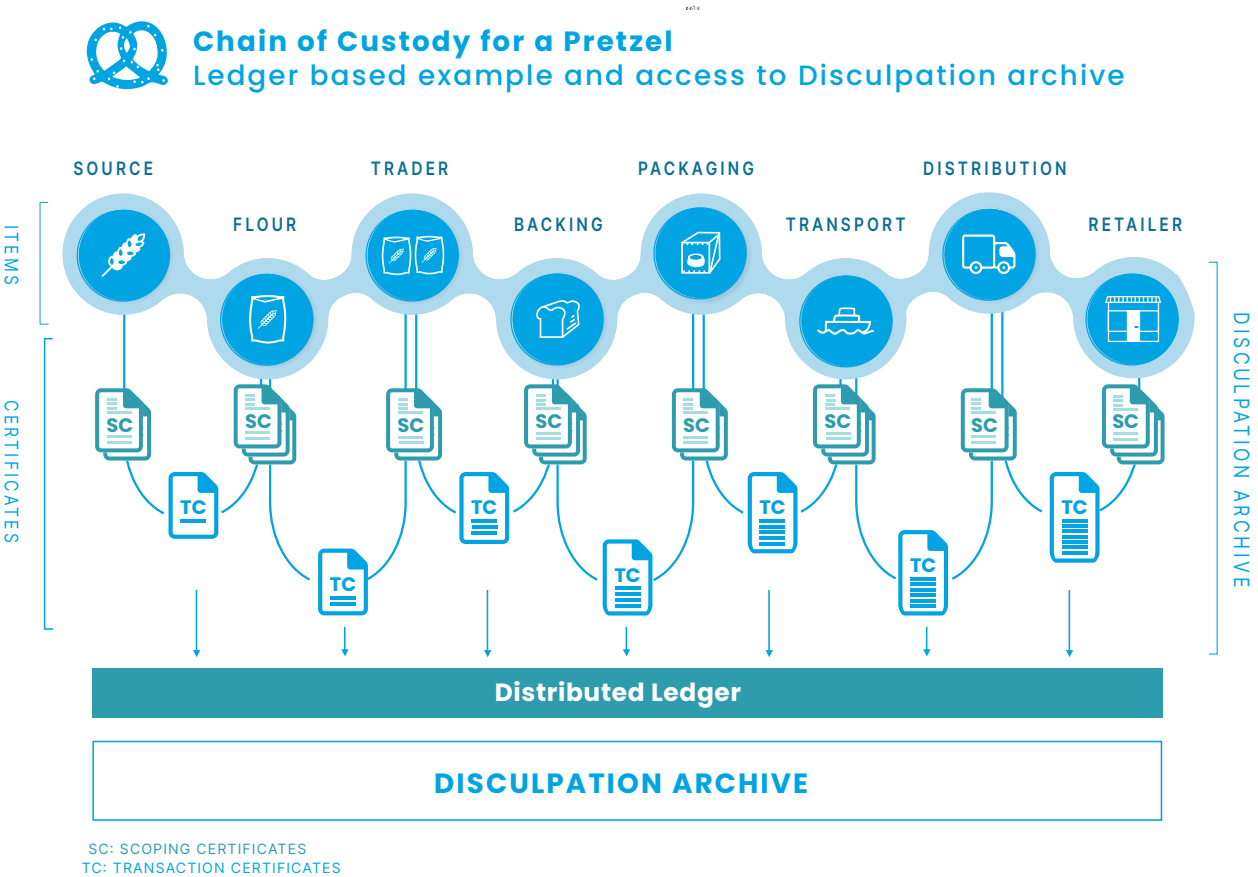
The primary Food Safety standards BRCGS, Global G.A.P., and Organic are enforcing internal quality management systems to prove compliance on individual “plot” level by internal inspections and control system documentation. To provide more assurance about the food safety and traceability of the total production. Without this internal control system, the stakeholders in the Chain of Custody are no longer able to get certified. This detailed internal quality registration is the first step towards Transaction Certificates for all standards, products, and stakeholders.

The picture above Chain of Custody for a pretzel – shows that the scope and transaction certificates are combined in a new digital package that travels together with freight documents through the Chain of Custody. Digitalization is a must to be able to manage the quality – food safety in the Chain of Custody.

Based on market size: >200.000 Producers (Groups) and 600+ Products, the concept of Chain of Custody is not only essential but carries with it a tremendous amount of trade value. Globally there are more than 200.000 Producer (Groups) (PO) which combined produce more than 600 different agriculture products. A producer group produces different products that each need to be certified. These products are certified by different standards for agriculture and food safety like Global G.A.P., BRCGS, and IFS-Food. All standards are working (together) to improve quality and traceability in the Chain of Custody. The number of certified products is the number of producers, multiplied by the number of produced products, multiplied by the number of standards applied.



Chain of Custody may be improved in quality by also adding the Service and Disculpation archive. According to the Oxford Dictionary, the word Disculpation means the action or an act of absolving from blame to exonerate. In situations where evidence needs to be produced years after, for example, a complete certification process has been performed and a certificate is issued, there are in today's world often problems with documents and evidence missing, which can cause costly and lengthy processes involving many parties. Applying many parties and allowing them to input documents to support one single file produces particular demands on the Disculpation archive solution.



The Zertrace app allows for speedy verification and easy management of Zertrace certificates on any computer or phone with access to the internet and does not require you to be a customer of Zertrace. The app may be downloaded for Android or iOS operating systems in their respective app stores.



Our added value supporting Chain of Custody from Zertrace Service and Product solutions;

- **Traceability in the value chain.**
- **Trust in data and information in documents.**
- **Meets efficiency demands.**
- **Digital transferability, management, and archiving.**
- **App-based tools for verification procedures on any device.**

Certificates, with certainty.

