BOOSTING RFID PRODUCTION

CISC XPLORER INLINE FOR RAIN & NFC

Dealer

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ADDING TRUST
IN A CONNECTED WORLD
CISC.AT

25+ YEARS OF EXPERIENCE

Dr. Markus Pistauer | CEO

At CISC, we follow a more than 25 year passion to add TRUST in communication technologies by providing competitive and innovative products with customer oriented engineering solutions to increase its performance, conformance, interoperability, security and privacy.

„When I founded CISC, back in 1999, I couldn't have imagined that one day companies within the top 50 of the fortune 500 list would be our customers". In the years since, CISC has successfully grown up and our international team strives to keep our work unique and smart, eager to be the best."

COLLABORATIVE PASSIONATE FOCUSED OPEN WORLD-CHANGING

CISC TEAM EVENT SOCA VALLEY

ABOUT US

CISC is a leading standardization consultant and an active member of the AIM (Germany and USA), ASI, CEN, ETSI, ESBS Austria, IEC, ISO, NFC Forum, RAIN Alliance and member of the INSIDE (former ARTEMIS) Industry Association. As a shareholder of the Silicon Alps Cluster GmbH we bring together players from industry, science and public authorities to develop and position the electronics and microelectronics sector in Austria with over 300 companies representing 67 thousand employees and 21 billion Euro revenue.

CISC is headquartered in Klagenfurt, Austria, with subsidiaries in Graz, Austria and Mountain View (CA), U.S.A.

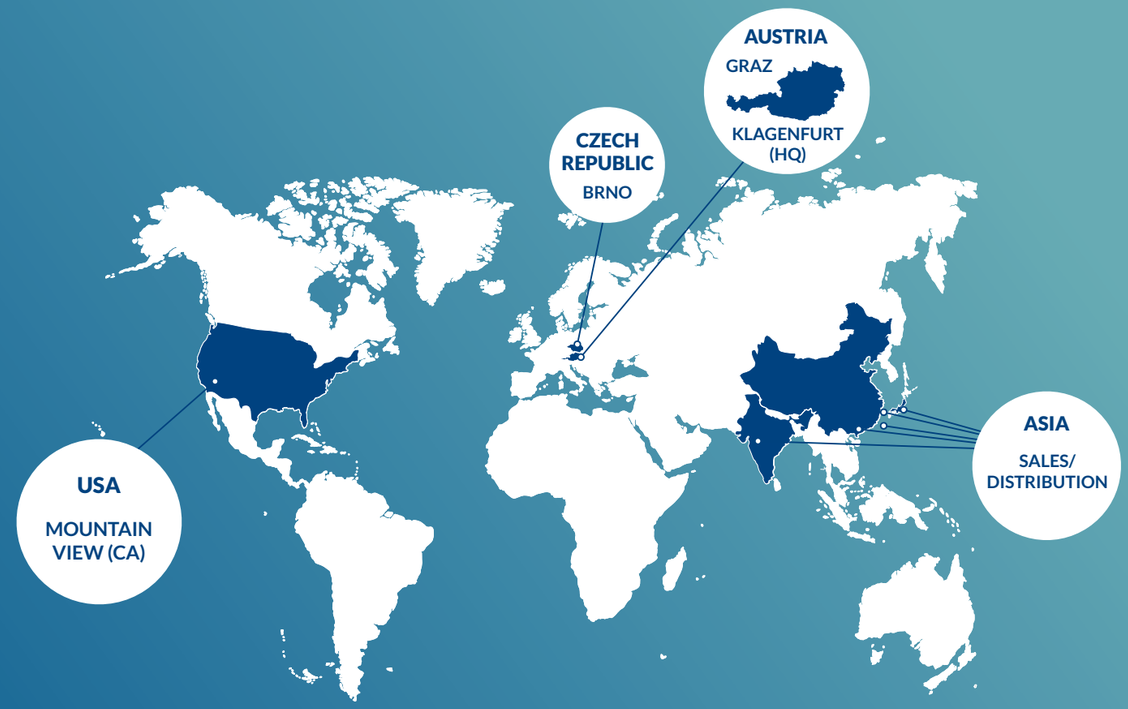
600+ ENGINEERING SERVICES

120 COUNTRIES

90+ JOINED R&D PROJECTS

38 PATENTS

10 AWARDS



INDEPENDENT

PARTNERSHIP ORIENTED

CUSTOMER FOCUSED

ONGOING IMPROVEMENT

WHY RFID MATTERS

IT‘S EFFECTIVE, SMARTER AND SAVER

RFID stands for Radio Frequency Identification. It´s a technology that uses radio waves to identify and track objects, animals or people automatically without direct contact or line-of-sight.

AUTOMATION AND EFFICIENCY

RFID automates tracking and identification, reducing the need for manual labor or barcode scanning. This makes processes faster and less error-prone in areas like: warehousing & inventory management, retail checkout & loss prevention or manufacturing & logistics.

REAL-TIME TRACKING

RFID allows for real-time location and status tracking.

SECURITY AND ACCESS CONTROL

RFID is widely used for authentication and restricted access:

- Keycards and 1D badges in offices
- Electronic locks in hotels
- Vehicle toll collection (e.g., EZPass, FasTrak)

DATA COLLECTION WITHOUT CONTACT

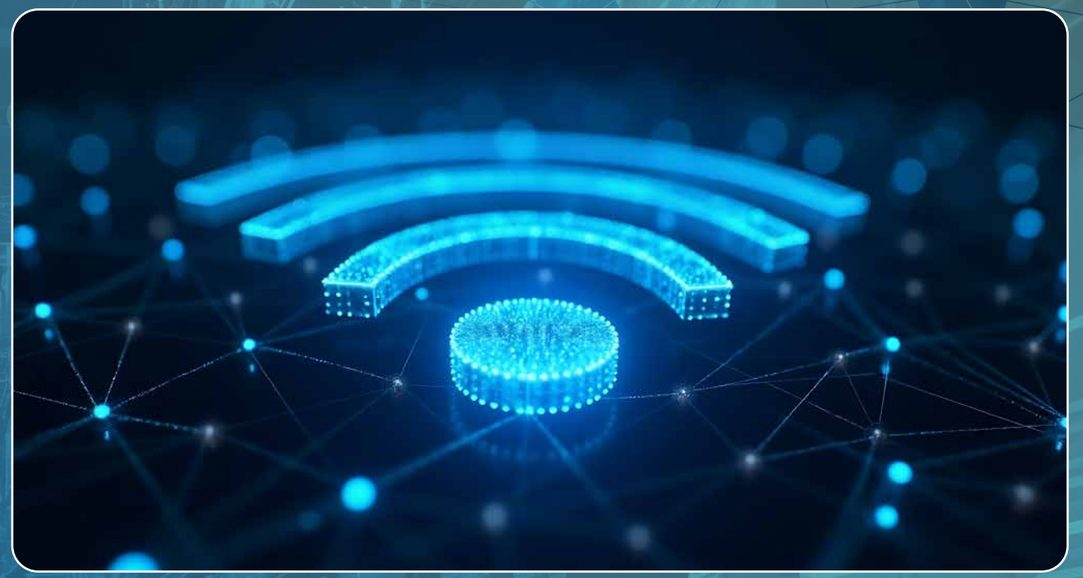
Unlike barcodes, RFID doesn‘t need to be visible or aligned to be scanned.

- Items in a box or stock can be scanned instantly
- Tags can be read through packaging, dirt, or clothing

SCALABILITY AND INTEGRATION

RFID systems scale well and integrate with IoT, cloud, and ERP systems-making them powerful tools in:

- Smart retail
- Automated healthcare tracking (medications, patients)
- Industrial IoT applications



RAIN (UHF)

RAIN is a type of passive UHF RFID technology based on global standards, designed for long-range, high-speed, item-level tracking

KEY FEATURES:

- Frequency: UHF (860-960 MHz), passive (no battery)
- Standard: EPC Gen2v2(v3) / ISO 18000-63
- Range: Up to 10+ meters (longer than HF/NFC)
- Power: Passive (draws power from reader signal)
- Use Cases: Retail, supply chain, logistics, manufacturing, healthcare, automotive ...

NFC (HF)

NFC standards for Near Field Communication - it´s a short-range wireless communication technology that allows devices to exchange data over very small distances, typically less than 4 cm (about 1.5 inches).

KEY CHARACTERISTICS:

- Frequency: HF (13.56 MHz)
- Power: Passive (tag) or active (device)
- Reader Range: ~0-4 cm (1.5 inches)
- Communication: Two-way (peer-to-peer)
- Typical Devices: Smartphones, payment terminals, NFC cards, smart posters

WHY IS TESTING SO IMPORTANT

Production errors and tolerances are severe challenges for any manufacturer of RFID tags. Nothing more can harm reputation, if the products have a too high failure rate as the impact can be costly. Hence, for RFID tag manufacturers it is important to test the quality of the tags already in the production line. To identify any failed tags and mark them is an important requirement. The dilemma, however, is that the quality test should not limit the speed of the production machine.

IDENTIFY FAILED TAGS IN THE PRODUCTION LINE

The CISC Xplorer Inline allows testing in the production line without limiting the speed of the machine. Optionally, you can encode and immediately verify your tags or smart labels. But this is not all. The tags which failed can be marked with an optional fail marker. The additional fail marker is adding so much convenience to it as it makes it easy to sort out failed labels later. To combine multiple processes to one, saves tremendous time and costs.

REDUCE LIABILITY RISKS TO A MINIMUM

To expand in the market and strengthen the reputation as a high quality manufacturer of tags there is no room for errors. As a manufacturer you need to deliver the highest quality. The testing possibilities mentioned help to distinguish from the competitors especially the test report makes it bullet-proof. Trust in the manufactured tags is good, a test report is better.

1 TESTING. ENCODING. LOCKING. IN A SINGLE STEP

ENCODING AND LOCKING

The RFID Xplorer Inline system is designed to efficiently encode, test, and lock data on RFID labels in a single, streamlined process. This advanced capability ensures that each RFID label is accurately encoded with the correct data, rigorously tested for performance, and securely locked to prevent unauthorized alterations. By consolidating these steps, the system significantly boosts production efficiency, minimizes the risk of human error, and guarantees the reliability and security of every RFID label. This makes it an essential solution for managing high volumes of RFID labels with precision and confidence.

YOUR #1 CHOICE FOR RFID PRODUCTION

HIGH SPEED PERFORMANCE
UP TO 300.000 UPH

ULTRA FAST TESTING TIME
< 4 MS

TESTING, ENCODING AND LOCKING
IN A SINGLE STEP

ENCODING AND INSPECTION
UP TO 200 M/MIN
UP TO 650 FT/MIN

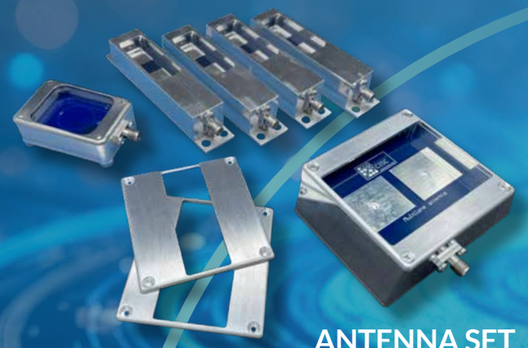
ENSURE 100% QUALITY
FOR YOUR LABELS, TAGS AND INLAYS

ENCRYPTING
FOR RAIN & NFC

#1 MEASUREMENT TOOL
FOR RAIN AND NFC

FLEXIBLE MODULAR FUTURE-PROOF

OUR XPLORER INLINE SYSTEM



ANTENNA SET

ENCODER
WHEEL + SENSOR

RACK |CONTROLLABLE
INTERFACE
UNIT (CIU)

NFC XPLORER INLINE

The CISC NFC Xplorer Inline is a unit for high-speed quality assurance testing of NFC inlays and tags during the production process.
The NFC Xplorer Inline system excels with its ability to seamlessly encode, test, and lock data on NFC labels in one continuous process.

KEY FEATURES:

- Variable H-field strength
- Provided a complete solution including antennas to support for class 1 – 6 tags
- Read / Write mode for encoding and personalization
- Test label operating field range
- GPIO for external trigger
- Serial interface for communication
- Supported standards:
  - ISO/IEC 14443A and B
  - ISO/IEC 15693

REAL-TIME
QUALITY CONTROL

HIGH-SPEED
PERFORMANCE

REDUCES COSTS -
EFFECTIVE PRODUCTION

MULTILANES
UP TO 12 LANE

TESTING, ENCODING &
LOCKING IN A SINGLE STEP

HYBRID OR
STANDALONE

RAIN XPLORER INLINE

The CISC RAIN Xplorer Inline is a unit for high-speed performance testing of RAIN RFID inlays and tags during the production process. It offers quality assurance during the production process from start to end.

KEY FEATURES:

- 800 MHz to 1 GHz
- TX power range from -10 dBm to 28 dBm
- Sensitivity up to -80 dBm
- Read EPC, TID and memory
- Encoding (Write memory)
- Measure tag sensitivity over frequency
- Test time starting at 5 ms per single read EPC test point
- Linear test time scalling, e.g. 18 ms for 3 read TID test points
- GPIO for external trigger
- Serial interface for communication

SYSTEM SETUP

HARDWARE & SOFTWARE COMPONENTS

CORE COMPONENTS

1

XPLORER INLINE (RAIN OR NFC)

High-performance RFID reader/writer that executes encoding and verification of RAIN (UHF) and NFC (HF) tags.

2

ANTENNA SET

Optimized antennas that transmit and receive signals to and from the tags, enabling precise encoding and reliable verification.

ACCESSORIES

3

CIU

Central controllable interface unit that synchronizes sensors, encoder wheel, and Xplorer. It manages data flow and communicates with higher-level systems.

4

TRIGGER SENSOR

Optical sensor that detects the presence of each inlay on the conveyor, signaling the CIU to initiate encoding and verification.

5

ENCODER WHEEL

Position and speed reference wheel that continuously measures conveyor movement, providing precise timing information to the CIU.

SOFTWARE

- **GUI**
- **API**
- **UART**

ENHANCE YOUR SYSTEM

ENCODING

QUALITY ASSURANCE

ENCRYPTING

RACK SYSTEM

Both systems are also available as a fully integrated rack solution. All mandatory components come pre-installed in a compact housing.

STANDALONE OR HYBRID

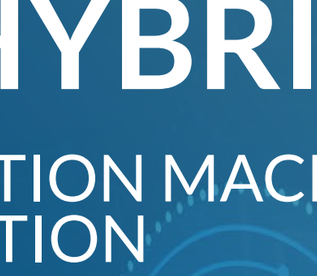
PRODUCTION MACHINE INTEGRATION

SYSTEM SETUP **HYBRID**

The Hybrid configuration is designed for seamless integration into existing production environments. It uses the same core components as the standalone system, but communicates with our GUI or directly with the host machine via an API interface. This setup enables fully automated control of testing, encoding, and locking processes – without requiring a separate GUI or manual input.

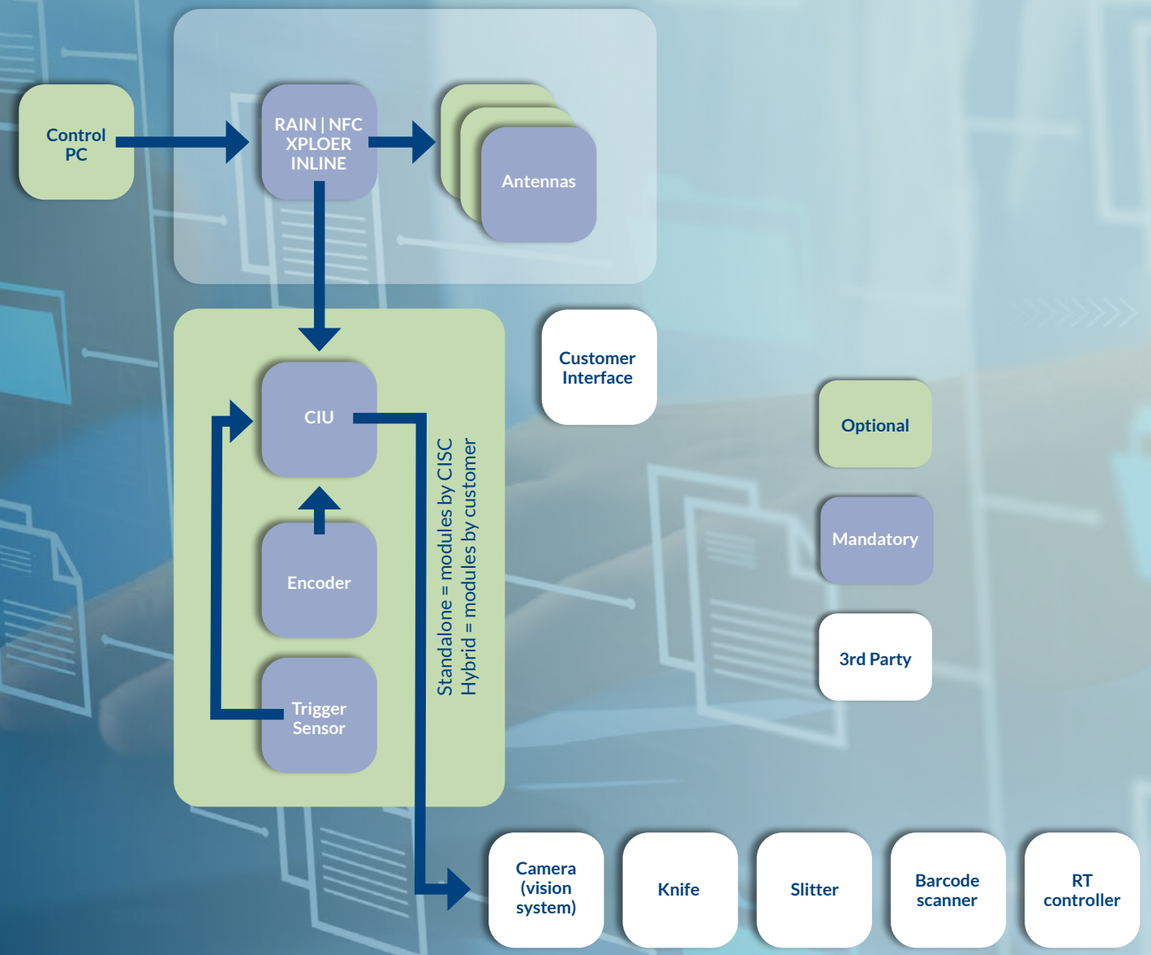
SYSTEM SETUP **STANDALONE**

The Standalone configuration is a fully independent RFID inline system designed for immediate use. It includes all mandatory core components required for autonomous operation – no connection to a host system is needed. Depending on your production requirements, the setup can be expanded with optional modules such as encryption or advanced reporting tools to further your production value.



HYBRID
Seamless integration into existing production lines – saves space and maximizes workflow efficiency

STANDALONE
Fully independent setup – ideal for new installations or lab environments.



SYSTEM PERFORMANCE

MAXIMIZING YOUR PRODUCTION POTENTIAL

The Xplorer Inline system is built for extremely high throughput – processing RFID tags within milliseconds. While the system can operate at virtually any speed, real-world production is shaped by external parameters beyond the Xplorer itself.

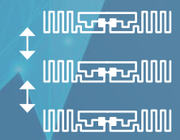
CHIP TYPE

The chip determines how fast data can be written or locked during production.
Different chip generations and commands vary in performance.

INLAY WIDTH

The wider the inlay, the fewer lanes fit on the web – reducing parallel testing and total UPH.
Tag speed stays the same; it's the number of parallel tags that changes.

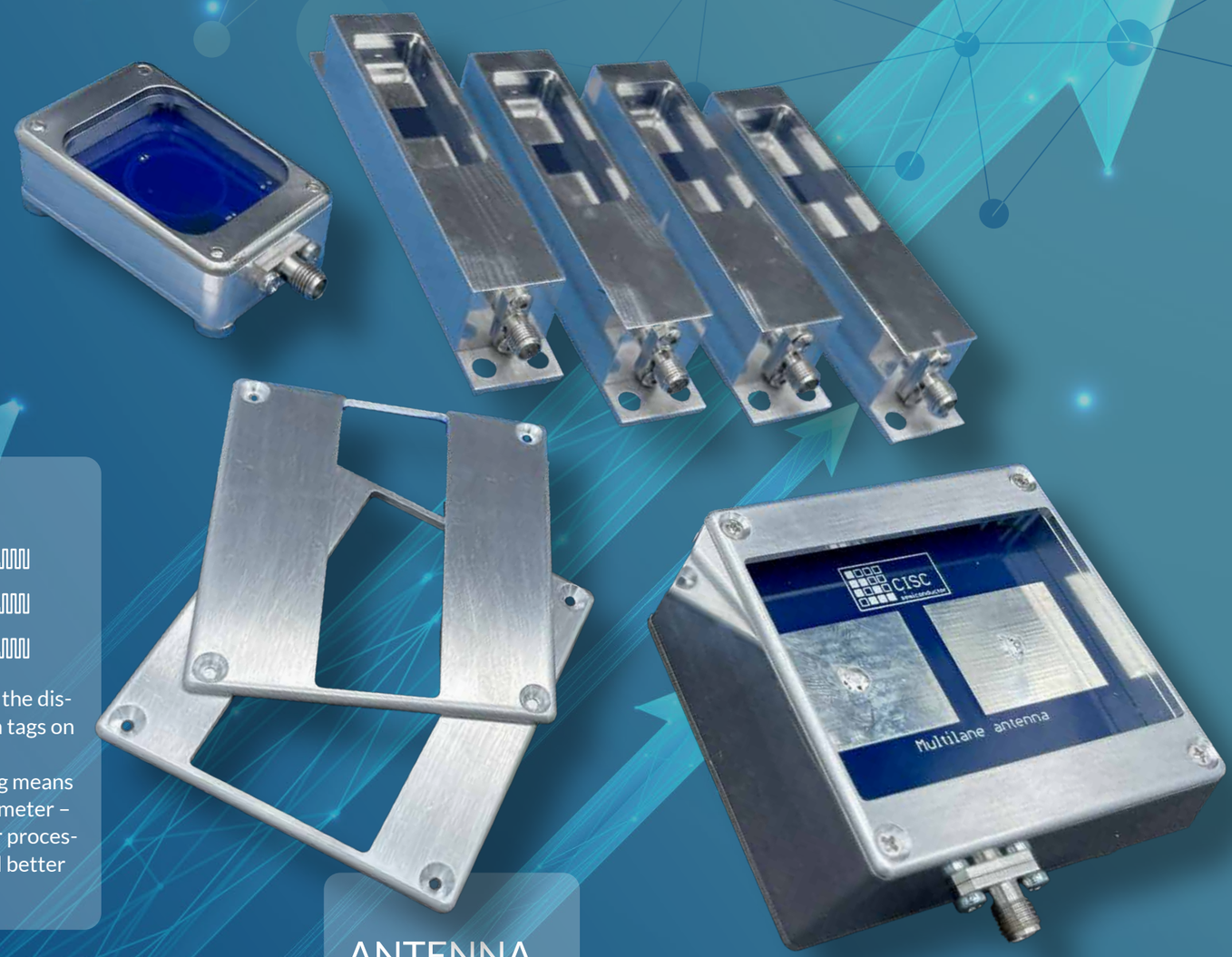
PITCH



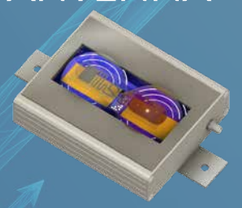
Pitch refers to the distance between tags on the web.
Tighter spacing means more tags per meter – allowing faster processing cycles and better effciency.

„Your production will not be slowed down by our system."

— CISC XPLORER INLINE Philosophy



ANTENNA



The different antenna designs are a crucial part of a RFID production regarding speed

LARGEST ANTENNA PORTFOLIO

We take care of your special requirement and also develop your custom antenna design to guarantee ultra-high performance speed for perfectly fitting to your project specification.

LONG-TERM PARTNERSHIPS

ADDING TRUST IN A CONNECTED WORLD!

OUR TRUSTED PARTNERS!

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