

RFID AND GIS

Working Together for Better Asset Management



 **InfraMarker**[®]
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CONNECTED ASSET MANAGEMENT

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Two-factor Verification is Best Practice for Safe and Reliable Workflows

Two factor verification (or authentication) is a security system that requires two distinct forms of identification for an action to take place.

It is a standard practice in the connected world to ensure safety and reliability.

The process is used to secure medical records, financial transactions, mobile device access, building access, and more.

Two factor verification is a best practice that can be applied to asset management to reduce errors, streamline field operations, and improve safety.



Field Asset Identification is Challenging

Assets that look alike and/or are in a congested area are difficult to distinguish.

Assets that are obstructed, or underground, or covered with debris are difficult to identify.

Etched or painted serial numbers on assets often become difficult to read over time in the field.

These identification difficulties lead to errors, worker frustration, operational delays, and even unsafe conditions.





GIS for Asset Management is Incomplete

GIS alone cannot deliver failsafe infrastructure asset management.

As more and more organizations use Geographic Information Systems (GIS) to manage field operations, the disconnect between digital asset maps and the physical world becomes apparent.

The cause is simple – digitally represented assets on maps, even when initially created with survey-grade precision for the asset location, are difficult to identify in the physical world.

Real world assets may be hidden, grouped closely together, displaced from the original location, or even located incorrectly in the original mapping. This uncertainty of asset identification makes it difficult to create traceable, verifiable, auditable records.

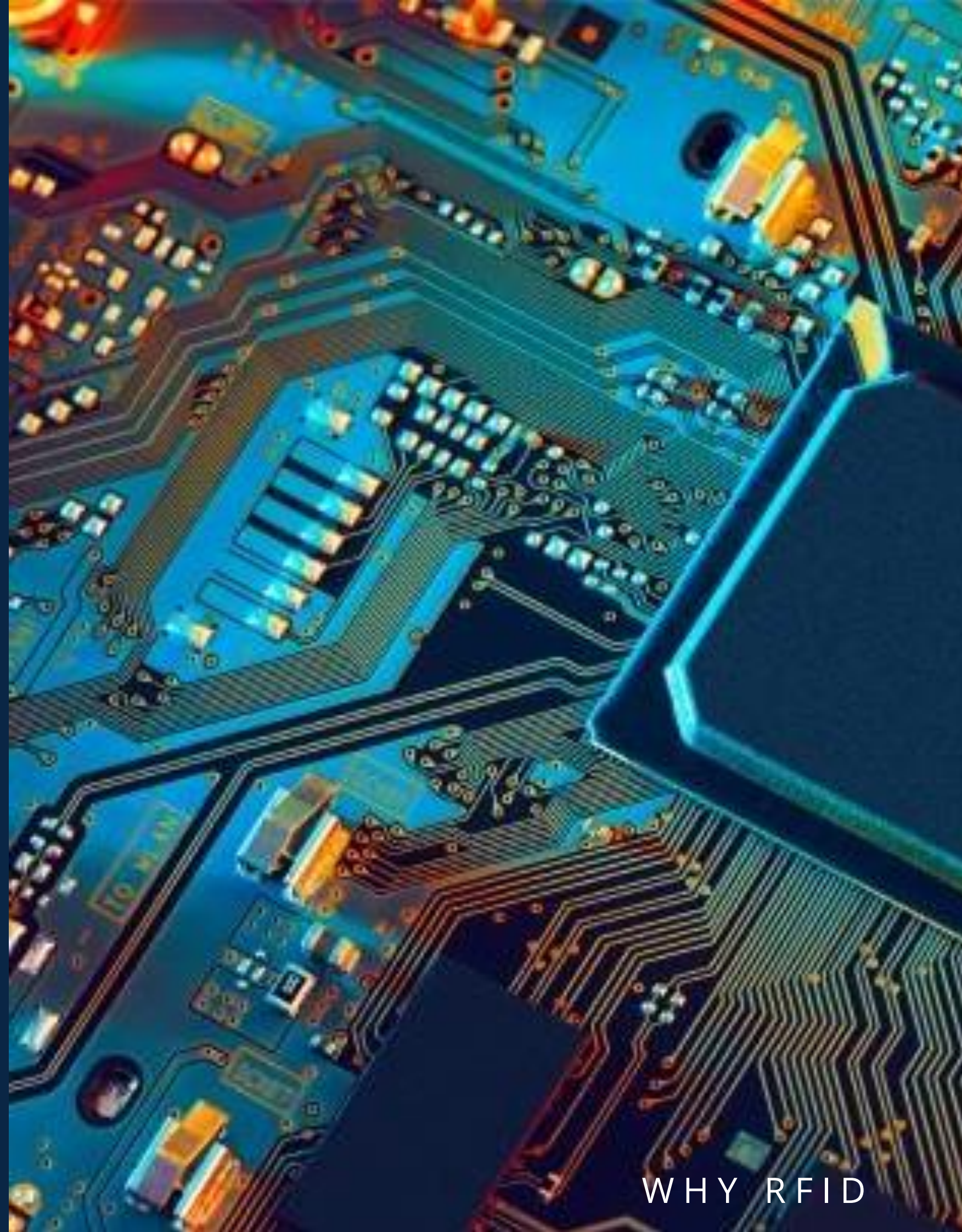
GIS *and* In-field asset identification
combine to deliver two factor
verification for assets in the field.

RFID: Identification Technology for Field Assets

Radio Frequency Identification (RFID) is an identification technology in a similar category to bar codes, QR codes, or even etched or painted serial numbers. Unlike other identification technologies, RFID uses radio waves to transmit a singular identifier.

RFID tags consist of a chip featuring a unique serial number and a transponder packaged in a range of configurations. The chip may include user memory that enables additional information to be written to the tag.

RFID is rugged, passive, scalable for many uses, and does not require line of sight - superior features for marking assets in an outdoor environment.





Passive UHF RFID

Passive UHF RFID tags are essentially little antennas with unique IDs that connect to a digital platform, effectively and positively identifying any asset marked. No other technology provides this connection as broadly, as simply or as effectively.

The tag information transfer is externally powered by the RFID reader, so no battery is required. The tags are extremely durable and ideal for outdoor use.

Passive UHF RFID is the fastest growing asset identification technology in the world.

RFID: Asset ID Marking Advantages

PASSIVE – no batteries or power source required;
can last years without maintenance

DURABLE – can be encased to operate in many
different environmental conditions

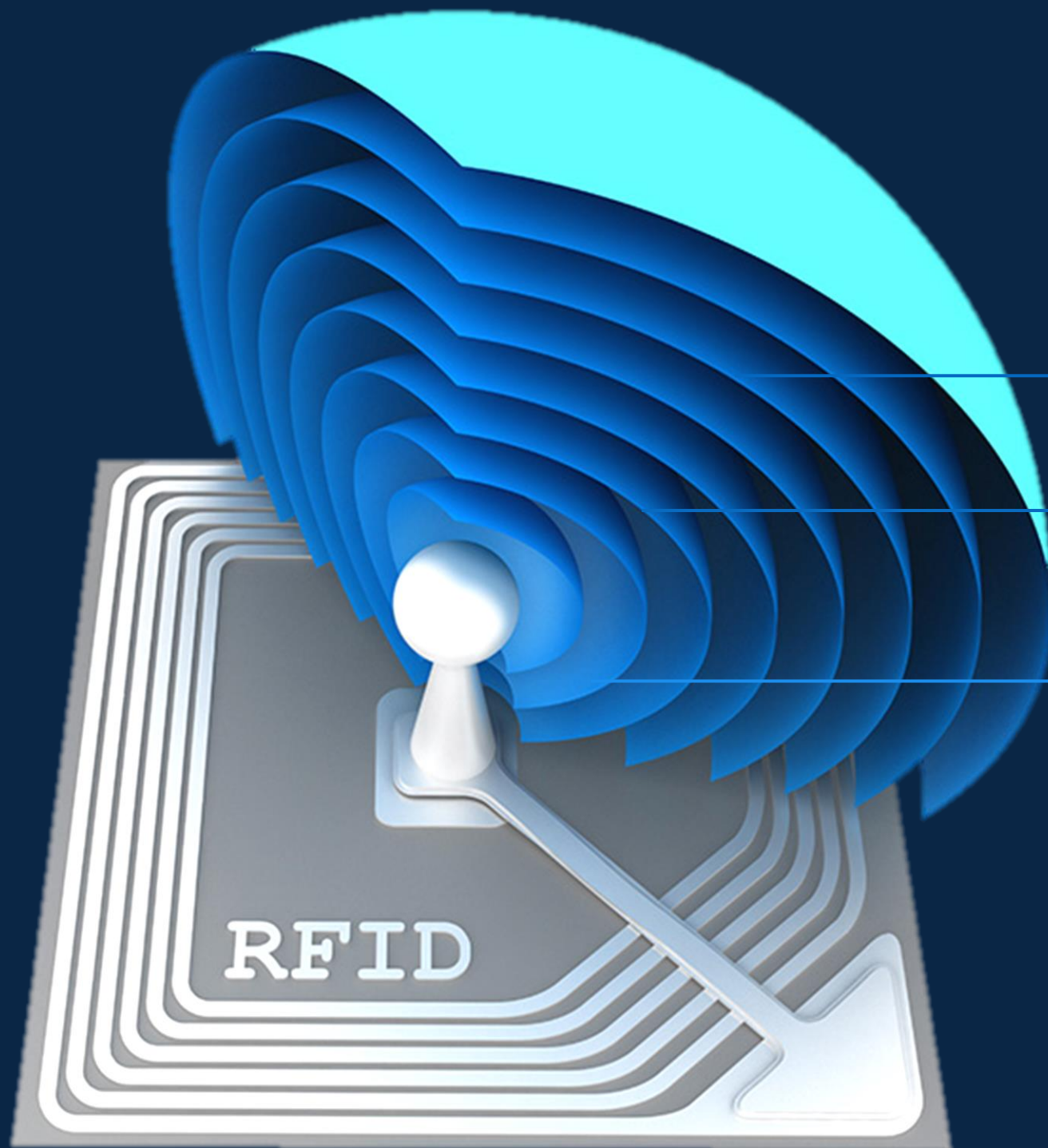
VERSATILE – come in many shapes and sizes to
work on virtually any asset

UNIQUE – can be configured with a unique ID and
guarantee each asset its own physical and digital
identifier

SCALABLE – RFID is a world standard ISO certified
technology; can grow with an organization's asset
management strategy



RFID Connectivity to GIS



RFID tags contain a unique digital identifier that can be incorporated in the GIS data record of the asset.

The RFID tag provides the verification of the asset displayed on the GIS map ... the second identification component of the two factor verification process.

Mobile software add-ins enable a RFID read to directly launch the related record in the GIS.

RFID access is now available on popular ESRI mobile platforms (Survey123, Field Maps and Webapps) that verify and connect the RFID asset identifier with ArcGIS.

RFID Improves Field Operations

RFID marking reduces the uncertainty and associated errors in field asset identification.

The RFID asset interrogation process is consistent from asset to asset, reducing training and simplifying field workflows.

With connecting software, RFID works with the mobile GIS tools to enable better field operations.





RFID Supports Audit and Compliance

Two factor verification (or authentication) is a standard safeguard in the digital world to ensure safety, reliability and compliance. The RFID read of an asset tag serves as a distinct and auditable second factor verification of the initial digital representation of the asset in the map.

For assets with audit and compliance requirements, RFID delivers. Each RFID read generates a date/time stamp. Additionally, because RFID reads must occur in close proximity to the asset, the physical presence of the technician at the asset location is verified, producing an independent and auditable trail of asset engagement.

RFID Enhances the Power of GIS

For organizations that want to leverage the power of GIS in the field, RFID is the asset identifier of choice.

RFID can be configured to directly connect to GIS and launch related data, forms and workflows associated with each specific asset.

For organizations with multiple departments engaging an asset, the unique RFID tag ID serves as a common asset identifier with connectivity to department-specific GIS.



SUMMARY

Two factor verification is a best practice in many industries and can yield better, safer field asset management.

RFID is the best identification technology for field asset management. It is passive, durable, and scalable for marking many types of assets and in almost any environment.

RFID has the added feature of being a unique digital connector to GIS.

GIS and RFID marking work together to deliver two factor verification of field assets.

For more information contact

www.InfraMarker.com