

# The importance of RCI for industrial applications

RAIN Meeting

Greenville, USA, 2020.02.05



**CAEN RFID design and manufacture RAIN RFID readers  
from 2003**

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Joined CAEN group in 1997, switched to CAEN RFID in  
2006

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Started as a SW developer, now leading  
the marketing and sales department

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**CAEN RFID joined the  
RAIN Alliance in 2014,  
just from its foundation**

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Member of various WGs, more active  
in the Developers WG

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Member of the Board of Directors from March 2018

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# What is RCI

- **Reader Communication Interface**
- The new RAIN guideline for host-to-reader communication
- Version 1.0 – Autumn 2018
- Version 2.0 – Summer 2019
- Version 3.0 – Autumn 2019





# Main characteristics

- Vendor agnostic
- Declarative
- Extensible
- Low-resource friendly
- Text based
- Interface agnostic
- IOT ready (Industry 4.0)
- Programming language agnostic

# Vendor agnostic

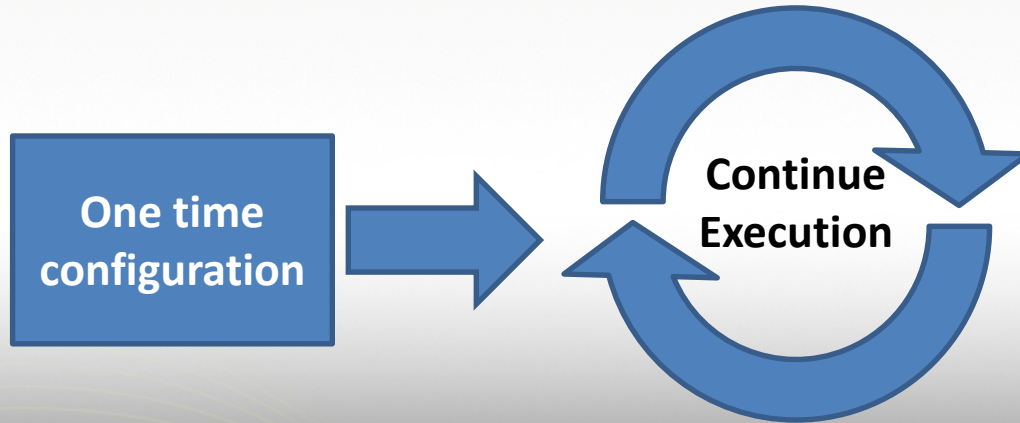
- Not only vendor independency
- Different vendor different type of products
- Unusual reading points





# Declarative

- Good for unattended apps



# Extensible

- New specific needs can be addressed adding custom functionalities to RCI

An example of a proprietary field in the **Config** message:

```
{"Cmd": "SetCfg", "_Led": "Red"}
```

An example of a proprietary message:

```
{"Cmd": "_VendorCmd", "_VendorValue": 100}
```



# Low resources friendly

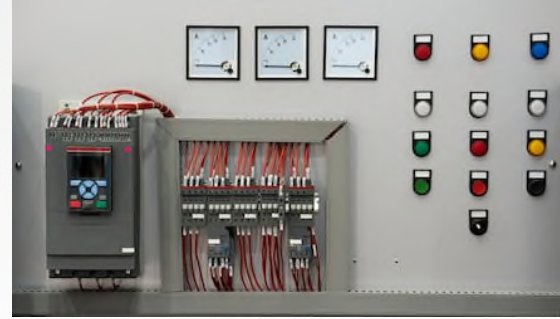
- Device variety, not only portals
- Embedded in machines/robots
- Low-cost readers for high number of read points





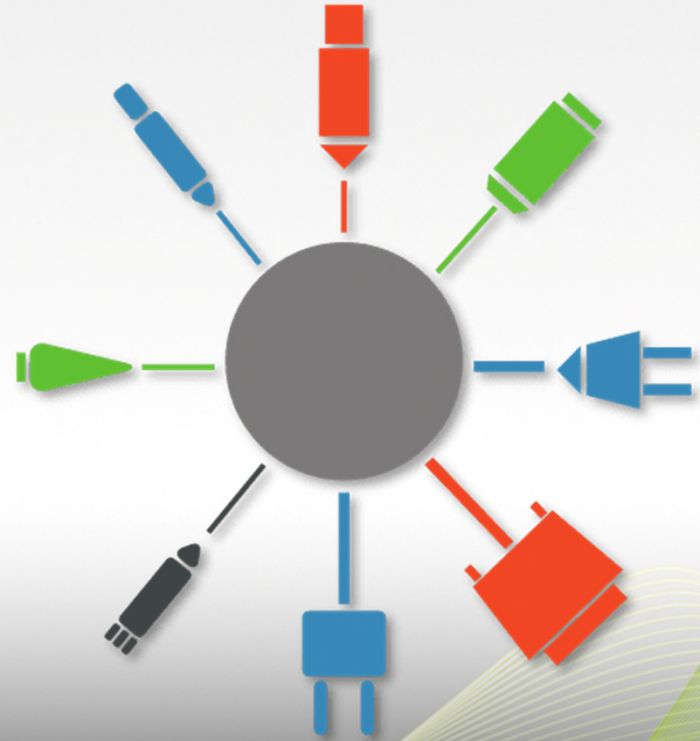
# Text based (JSON)

- Human readable
- Simple to debug
- Easier to integrate with legacy devices (PLC, field bus controllers...)



# Interface agnostic

- Ethernet, Serial, USB, Bluetooth  
...
- MODBUS, ProfiNet, Ethernet/IP,  
OPC UA ...
- One mapping for any reader
- Developers WG started initiatives





# IoT/Industry 4.0 ready

- JSON format (internet friendly)
- One mapping for any reader
- Developers WG started initiatives





# Progr. lang. agnostic

- RCI do not define an API for a specific language
- JSON coding/decoding libraries widely available



# Contribute!

- RCI almost complete but ...
- ... field bus mapping
- ... IoT protocols mapping
- ... application examples
- ... vendor implementations

