

*Smart***EDGE**

Intelligent Edge Device

# Use Cases

*SmartEdge* has a flexible design that enables its adaptation to various use cases. Few of them:

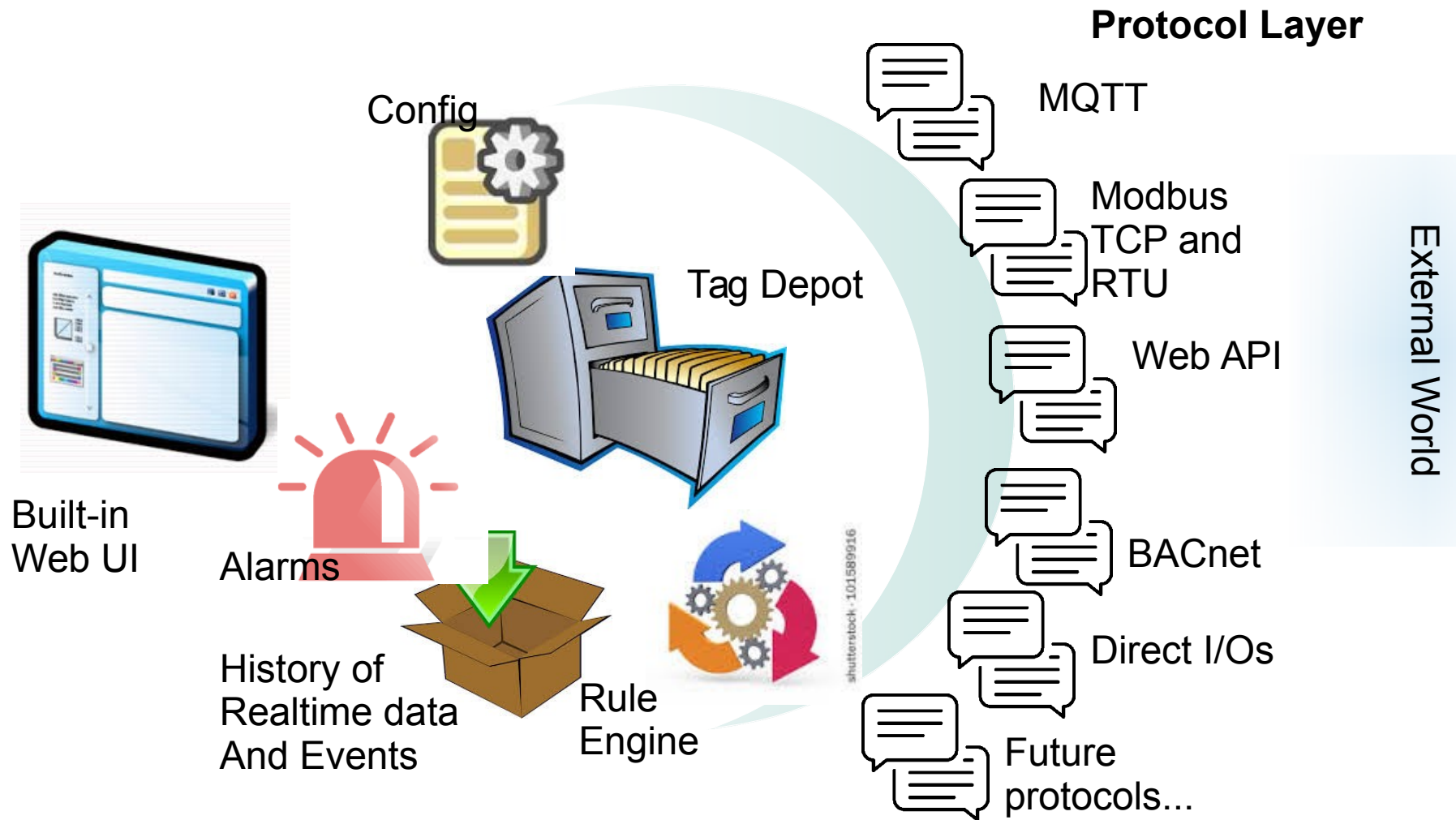
## Smart IOT Gateway

- Simple control system with local touch-HMI, or remote web-based GUI.
- Industrial protocol converter (e.g.: Modbus to BACnet)
- Clustered
  - As elements in distributed control system
  - Several *SmartEdge* devices in a network, one of them acting in supervisory mode, hosting HMI for whole system.
- In fault-tolerant dual-redundant configuration

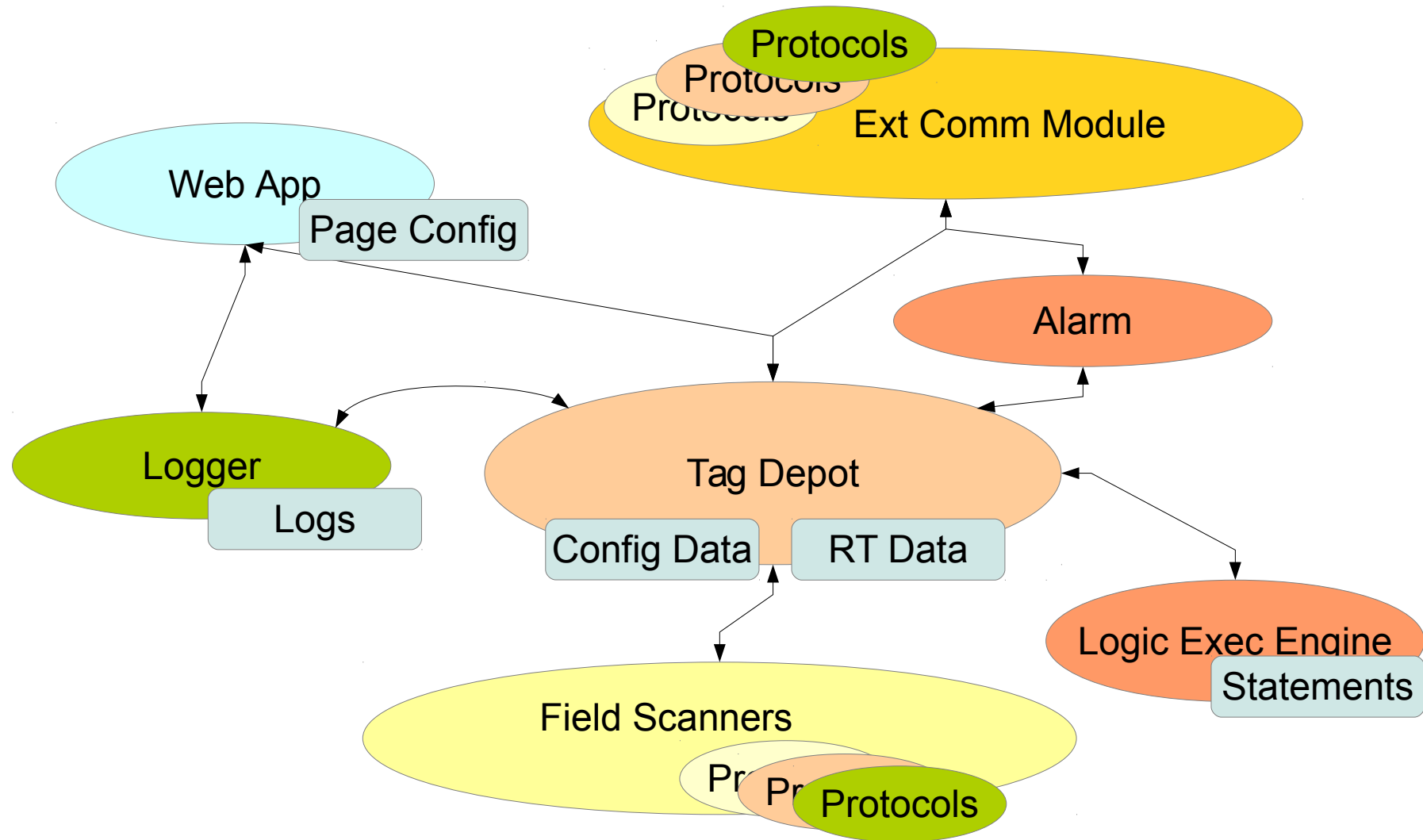
# USPs of *SmartEDGE*

- Highly customisable.
  - Most of the use cases can be implemented merely through configuration.
  - Custom logic can be implemented using in-built rule engine
- Extensible
  - If required, the plugin architecture allows adding new application modules, using C/C++ or scripting languages.
- Hardware agnostic
  - The design is easily portable to any embedded platform that can run Linux OS (ARM, Intel Quark, Intel Atom)
- Low cost
  - Designed for running on a resource constrained system

# Conceptual overview of TELEMION Design



# Relationships of Main Runtime Components



# Tag Depot

- Centralized data representation shared by all modules. Contains both dynamic and configuration data.
- Hierarchical Organization
- MQTT style wild card search
- Tag Categories and implicit children to enable definition of category specific attributes
- Links to enable support of multiple nomenclatures for different protocols
- All configuration parameters are also tags

# Restful API

- Optimized for bulk access
- Two stage access
  - Get list of **handles** for by supplying tags and wildcards (infrequent, slow, complex JSON)
  - Get/set values by supplying list of handles (frequent, fast, simple JSON)
  - Get/set values with tag names (infrequent, slow, non-bulk)
- Configuration CSV upload / download

# API – C and Command Line

C and Command line APIs help to easily add more modules to the platform

- C API for C and C++ apps
- Command Line interface for scripts and trouble shooting
  - Plain text interface
  - JSON interface



THE END