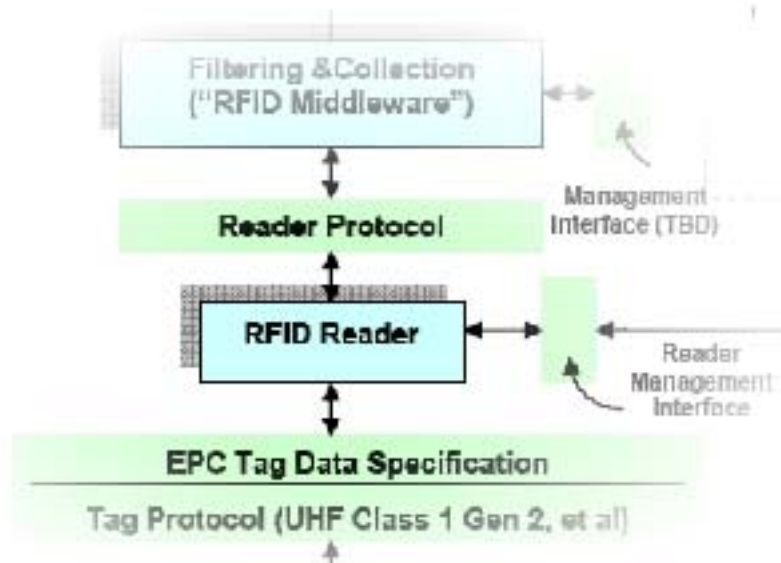




# Low-Level Reader Protocol (LLRP) *End-User Perspective*



# LLRP Overview



- LLRP is the 2<sup>nd</sup>-generation EPCglobal Reader Protocol
  - “Low-level” ≠ simple
  - “Low-level” = complete
- LLRP provides full access to all features of the air protocol(s) supported by the reader
- LLRP satisfies application reader control requirements
- LLRP supplies a complete set of tag data access primitives
- LLRP supports reader operations in all regulatory jurisdictions

Uniform software infrastructure for RFID-enabled facilities

- Common support and installation expertise

- Common performance monitoring tools

- Enables best-in-breed device selection

- Lowers operational cost

Uniform partitioning of functions and roles between:

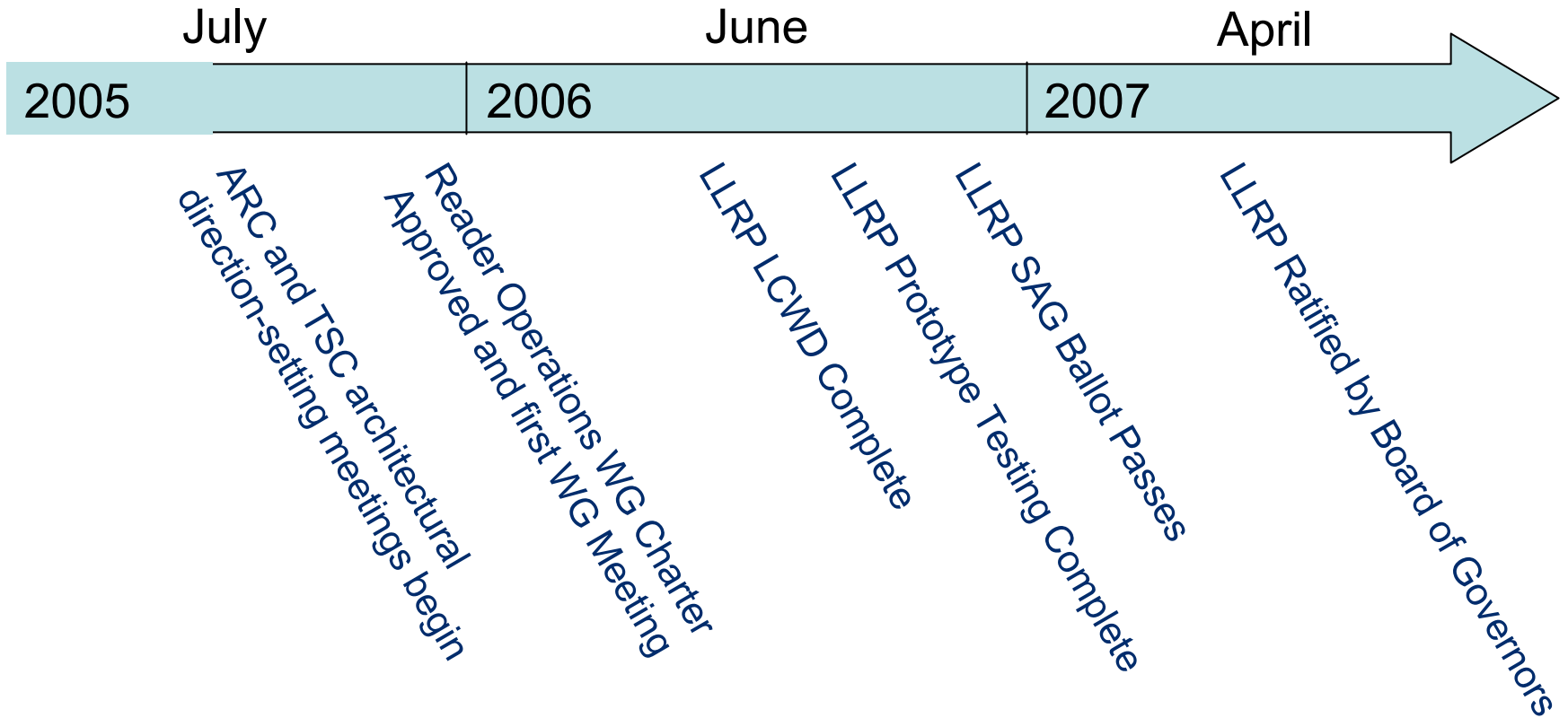
- Readers

- Clients

- and other system devices (triggers, sensors, etc.)

Predictable and consistent system-level performance

# LLRP Timeline



*Over 80 companies participated in this standardization effort, including end users; and reader, software, and network infrastructure vendors*

## ***Declarative*** operational model

Set-and-forget  Fully-interactive control

Full reader control ability

Full tag data, event and error reporting abilities

RF Survey interface

Adapts to reader hardware/firmware capabilities

Future-proof, modular design

Extensions to current air protocols

New air protocols

Extensible by vendors

## Tunable for best overall tag inventory performance

- Dense/Multi reader modes

- Singulation algorithms

- Managing the subset of tags to inventory

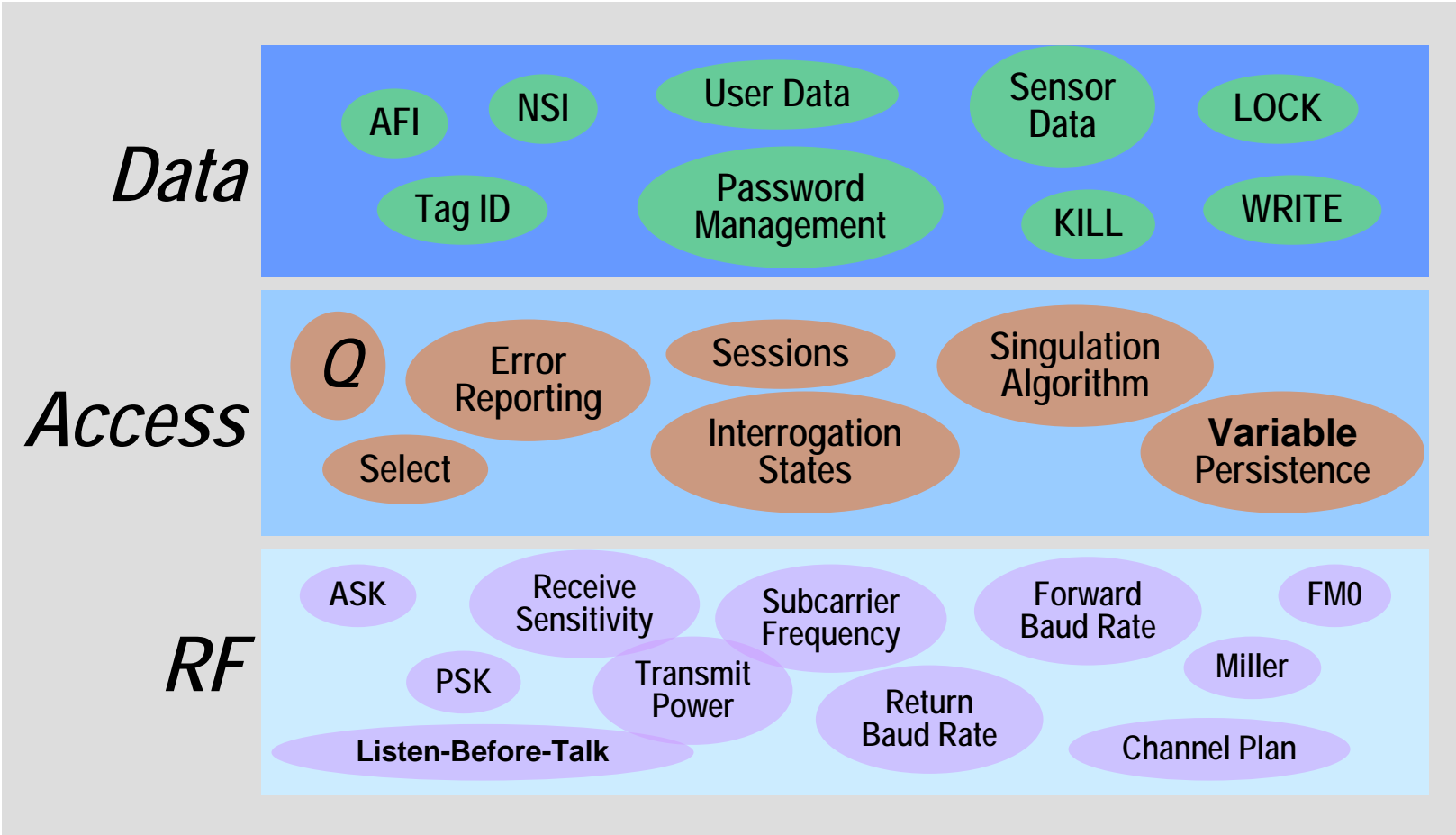
## Rich set of tag memory operations

- Password protection: secure locations in tag memory

- More operations allowed: read/write/kill/lock

- User memory region: to store ancillary information

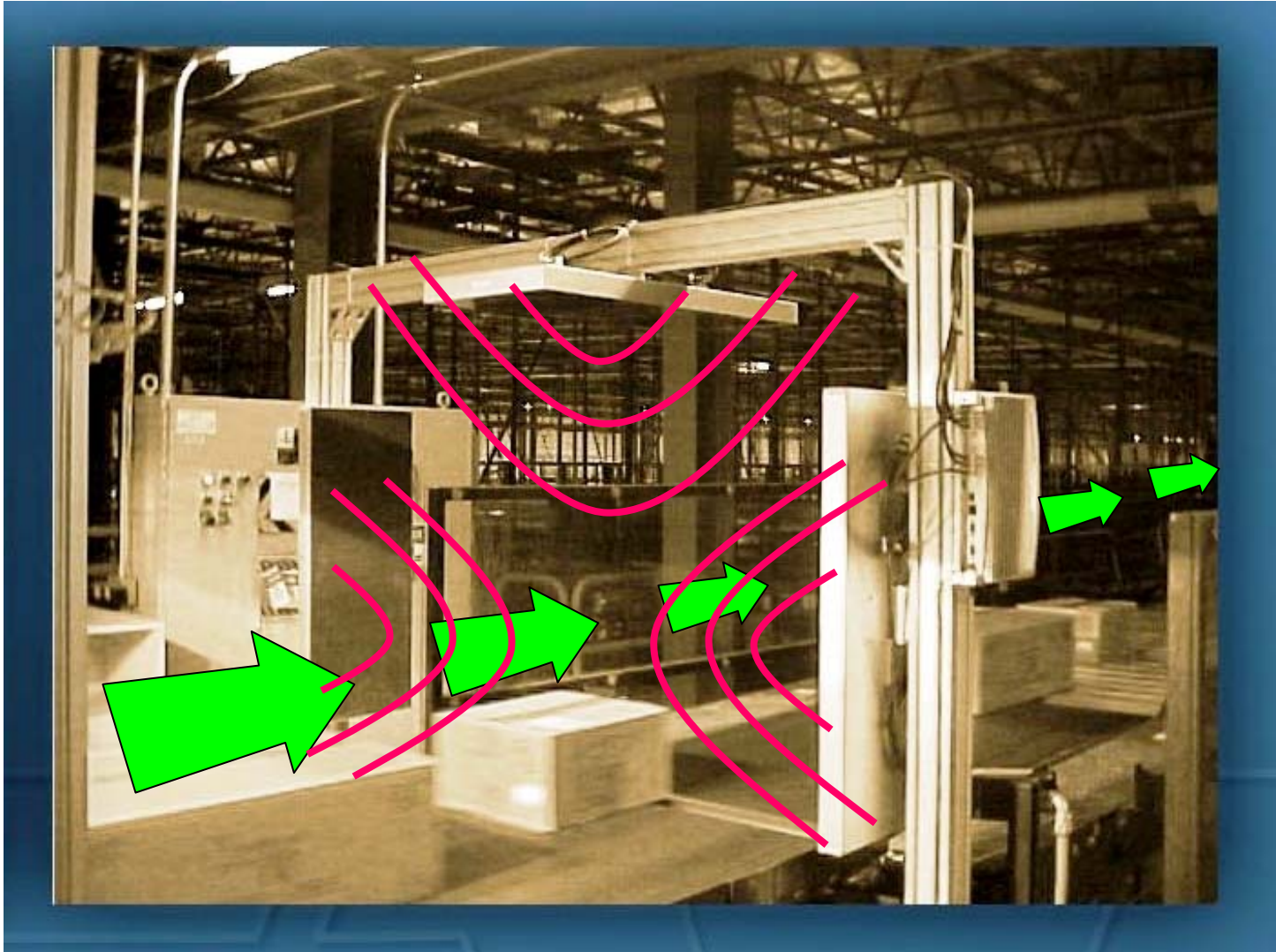
# Gen2 Air Protocol Parameters



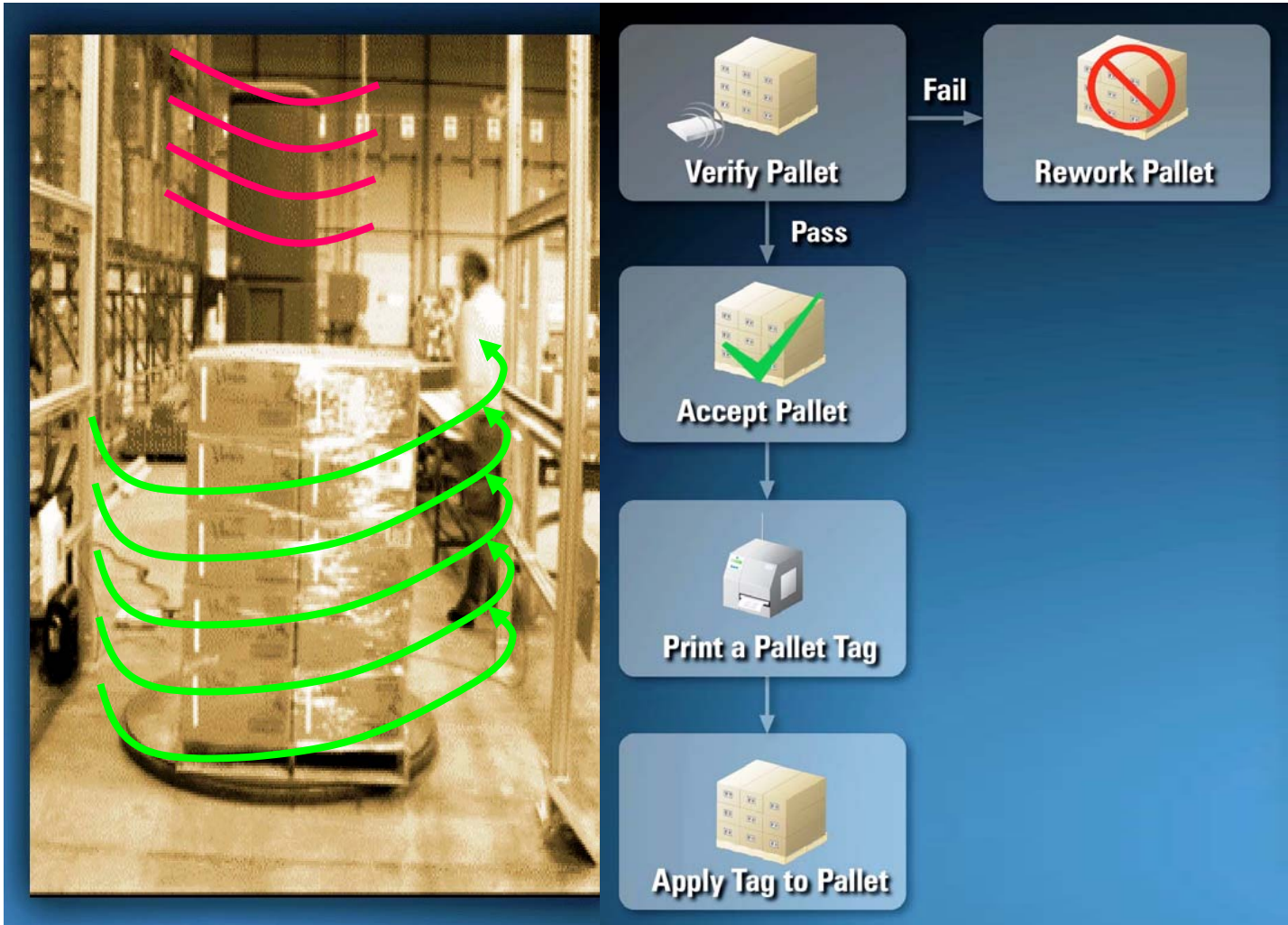
# Dock Doors



# Conveyors



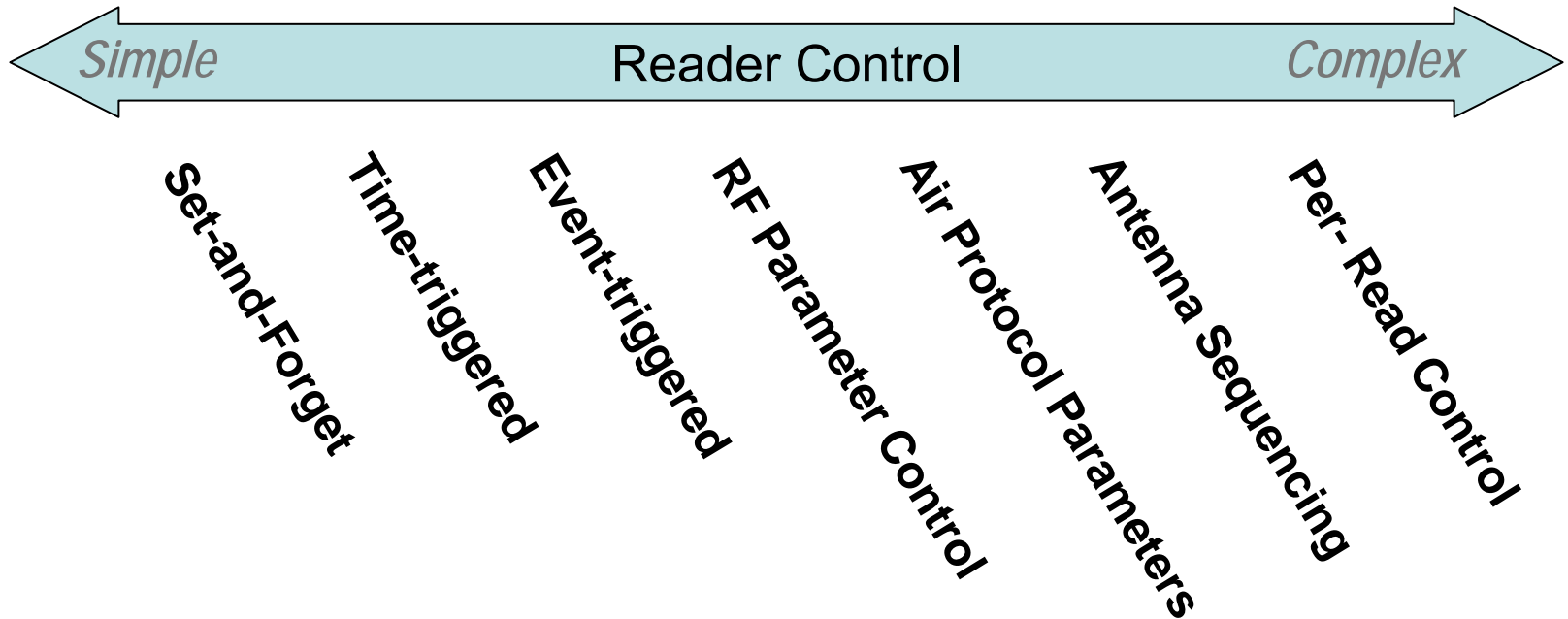
# Aggregation Points



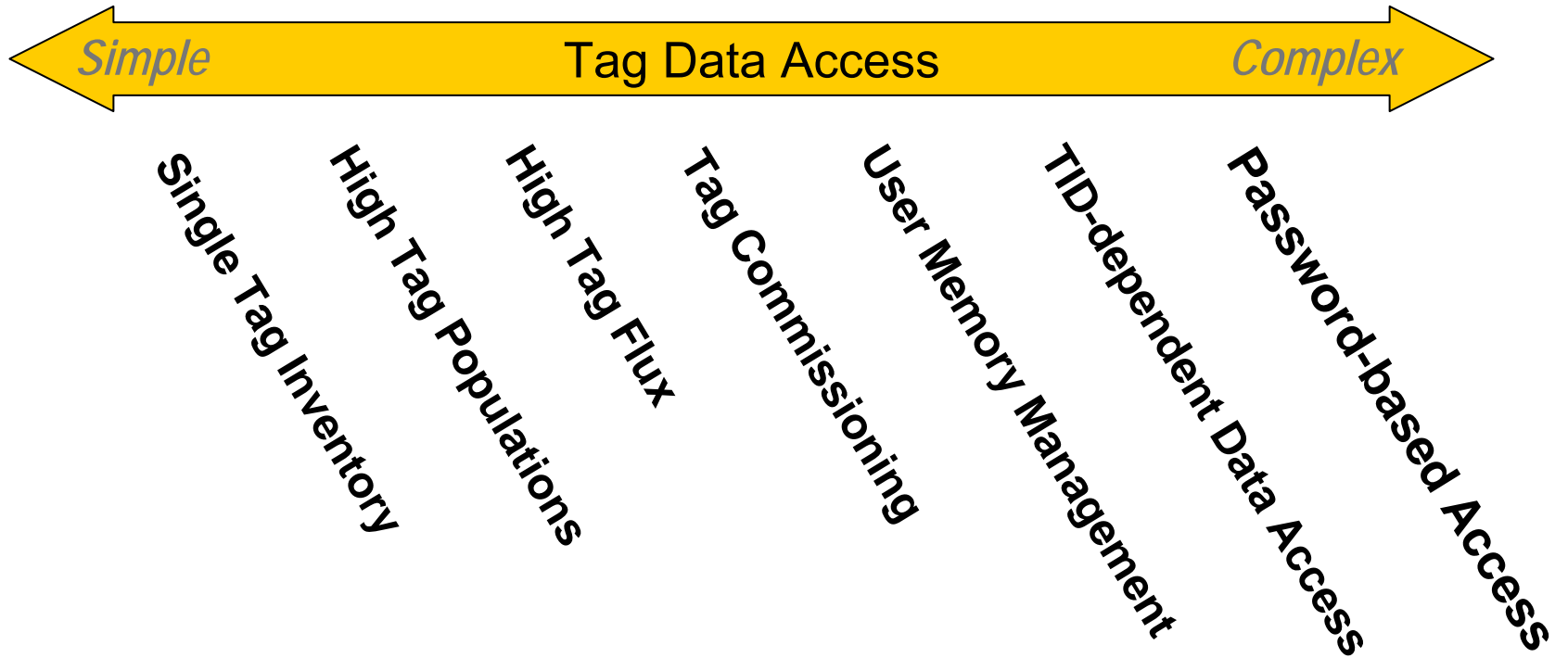
# Handheld Readers



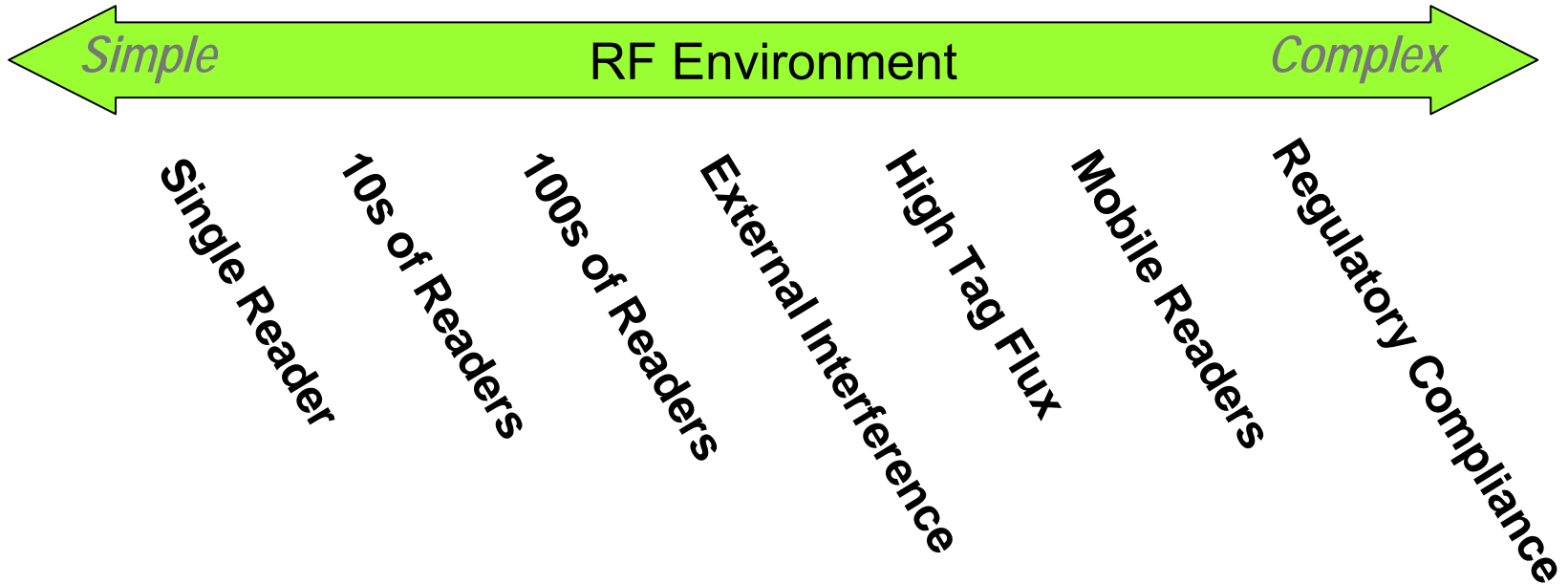
# Reader Operational Control Requirements



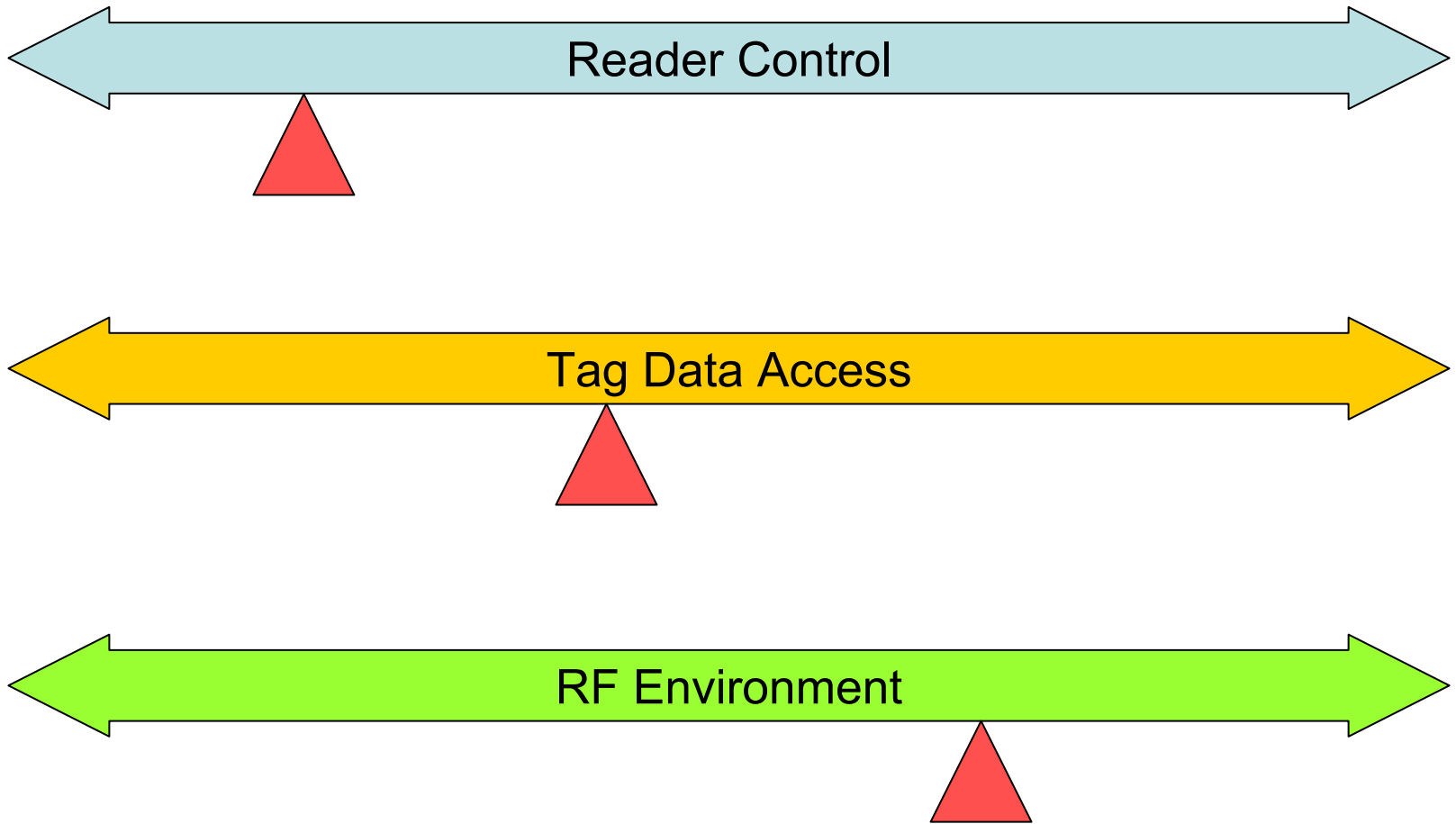
# Tag Data Access Requirements



# RF Environmental Factors



# What are your application requirements?



## Why adopt LLRP?

LLRP supports the broad range of reader designs, roles and capabilities

LLRP supports the broad range of application reader operational requirements

LLRP has been successfully tested among reader and client vendors against challenging ARC/TSC use cases

Interoperable LLRP-compatible chipsets, readers and clients are coming to market now!