Sensory Information Fusion & Privacy

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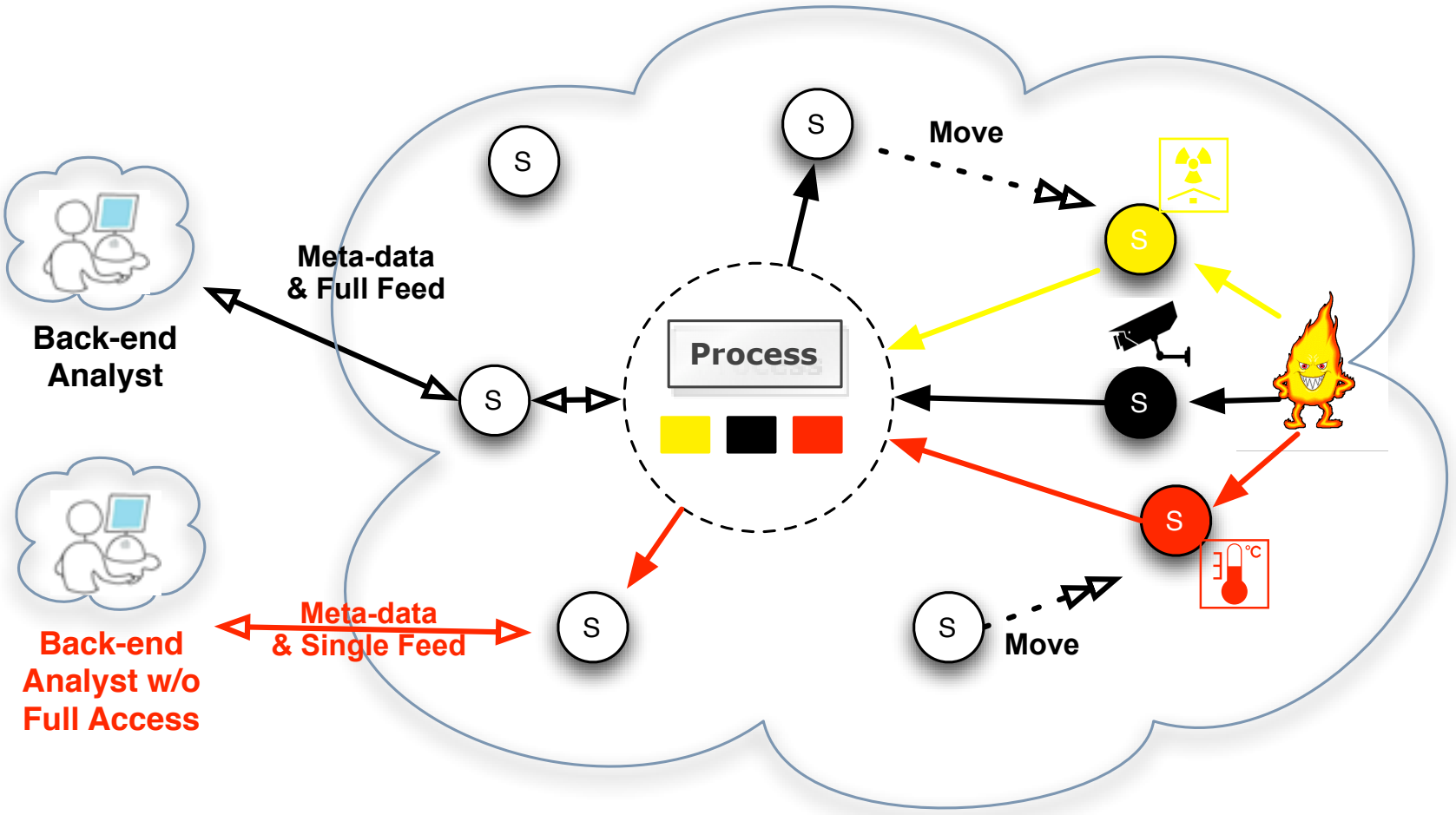
Introduction

- Wi-Fi devices and sensors become more prevalent
  - Wi-Fi Laptops
  - iPhone, Blackberry, VoIP-enabled phones (T-Mobile)
  - Wearable devices, field sensors
- Mobile ad-hoc networks are easily deployable
  - Fixed Infrastructure is expensive or destroyed
  - There is a need for node or data mobility
    - Health Sector
    - Disaster Recovery
    - Military Operations
    - Commercial Applications

What are we trying to achieve?



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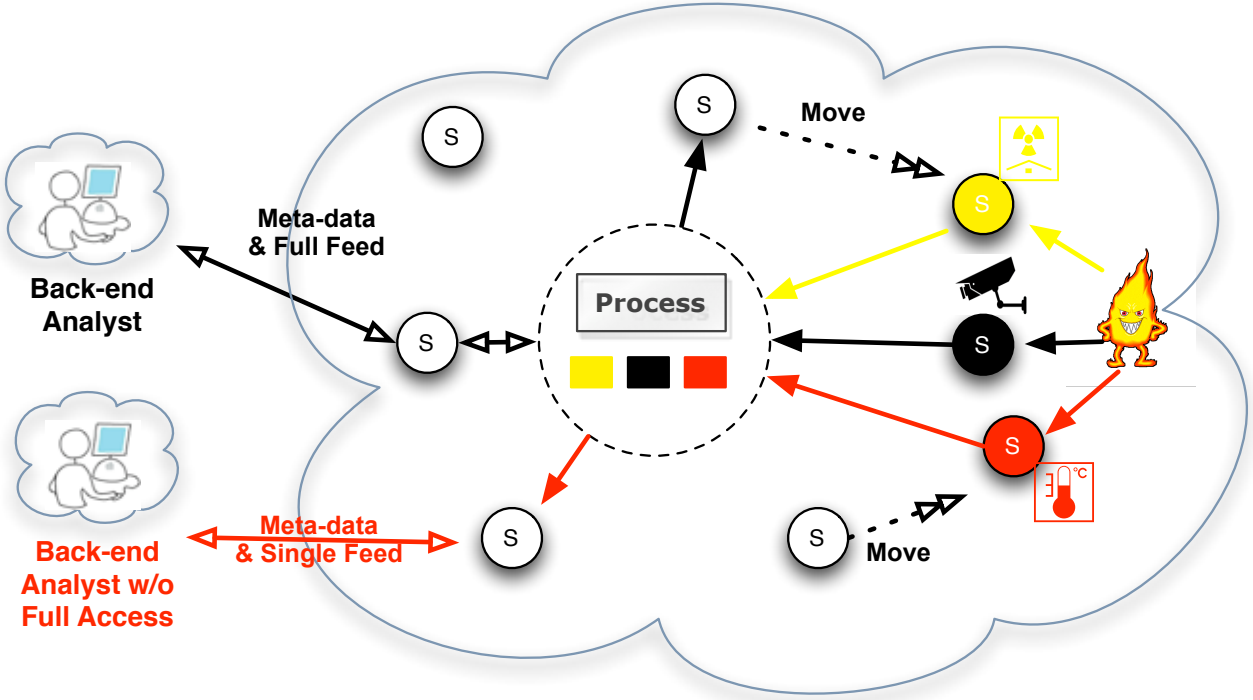

- Shared Infrastructure but **NOT shared DATA**
  - Processing nodes receive and analyze data
  - Privacy of Data goes beyond mere encryption
  - Sensors are both Routing and Collecting Data
  - **Sometimes Analyst Objectives are conflicting...**

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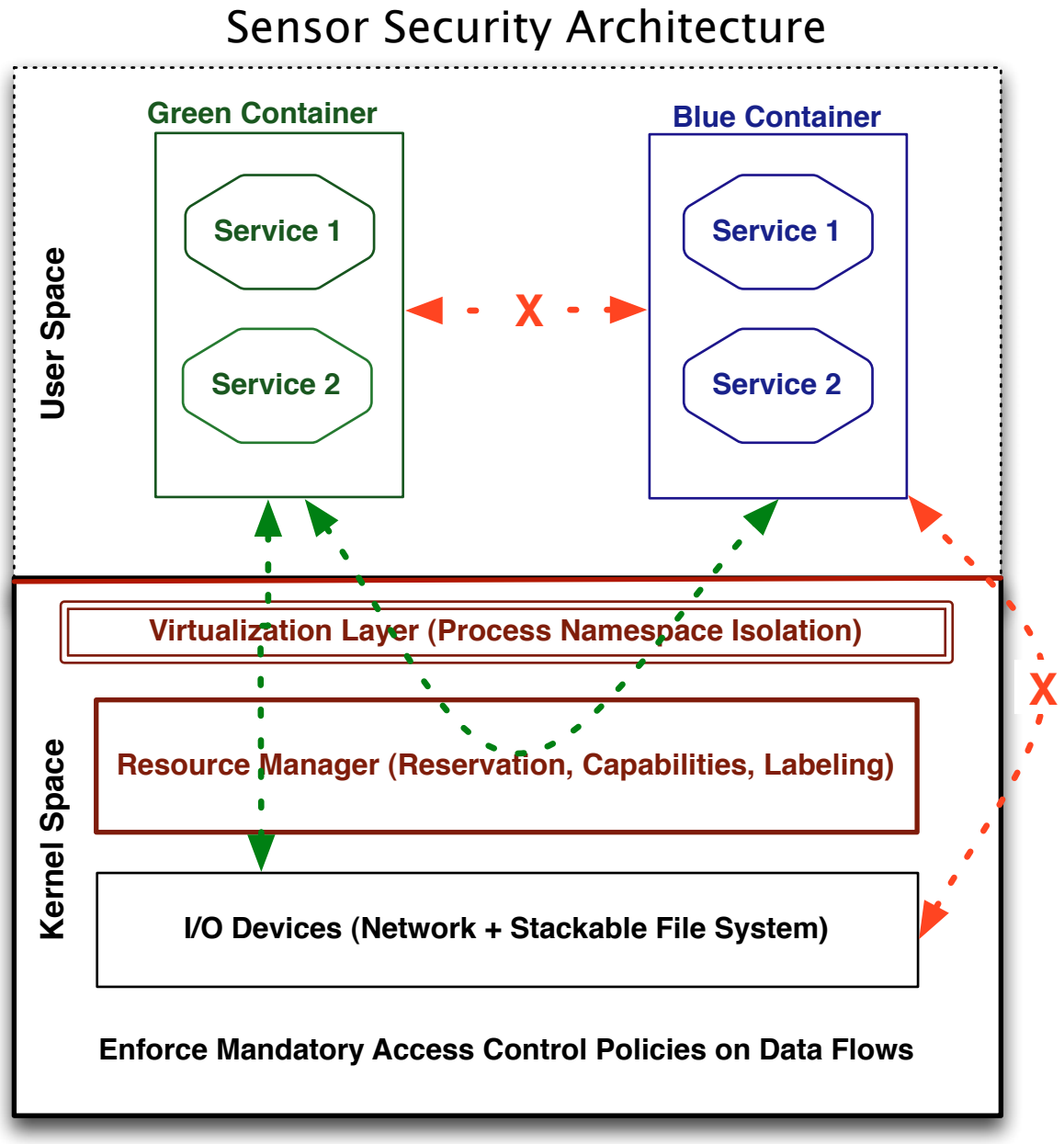
What do we propose?



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What is next?

- Move towards a Goal-Oriented architecture
  - Sensors running multiple, isolated services
  - Focus on Data Analysis & Resource Allocation
  - Data Privacy a primary concern
  - Energy for Processing Nodes less of an issue
- Competitive Analysis Algorithms for Mobility
  - Maximize utility of the underlying network while meeting resource constraints
  - Adversarial Analysis whenever in a “hostile” environment