

**“the future is so bright ...
I have to wear shades?”**



**Moving to Multi-Networks, not
just Heterogeneous Networks**

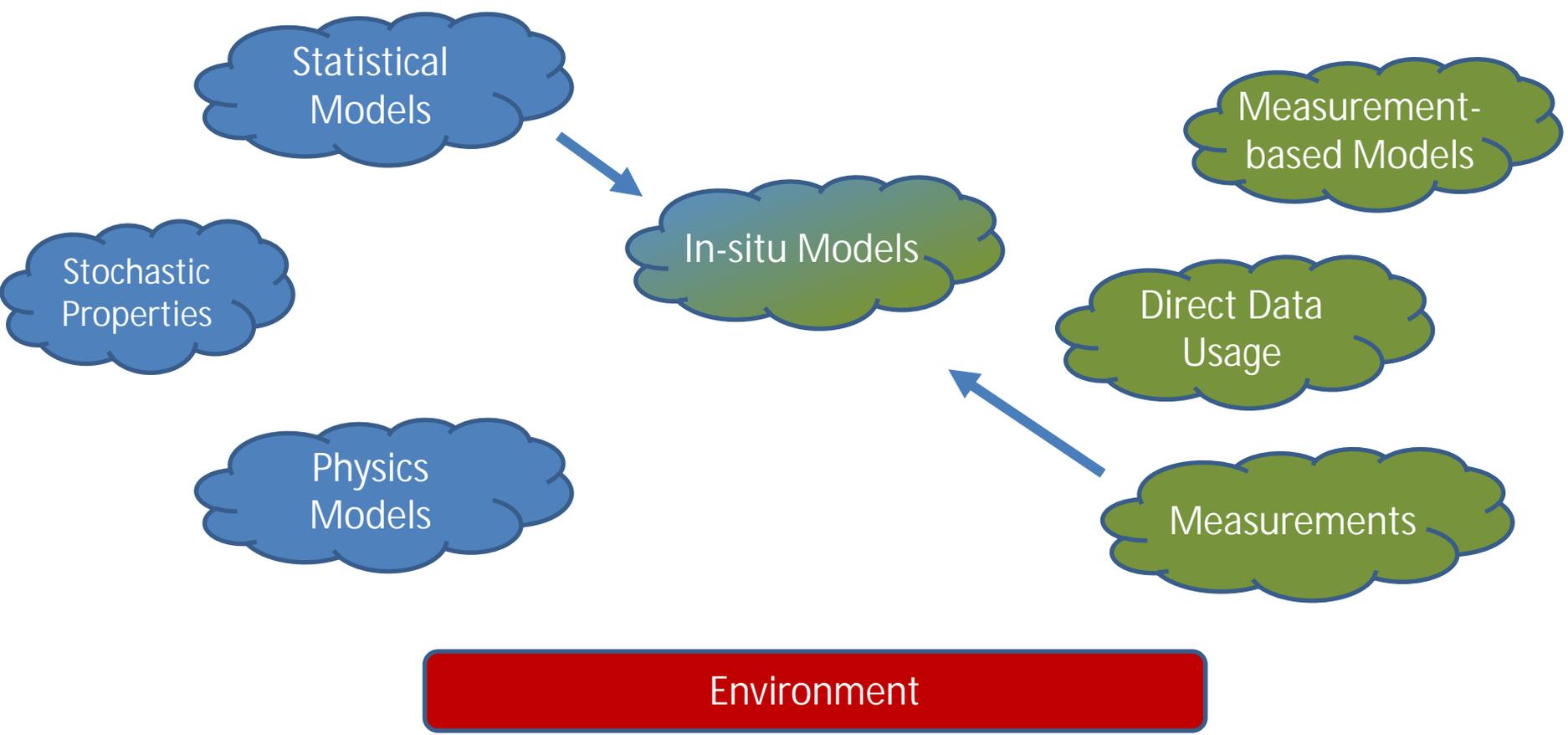
**New Architectures (moving from the
PHY to Systems of Systems focus)**

QoS + Capacity + Access = Utility

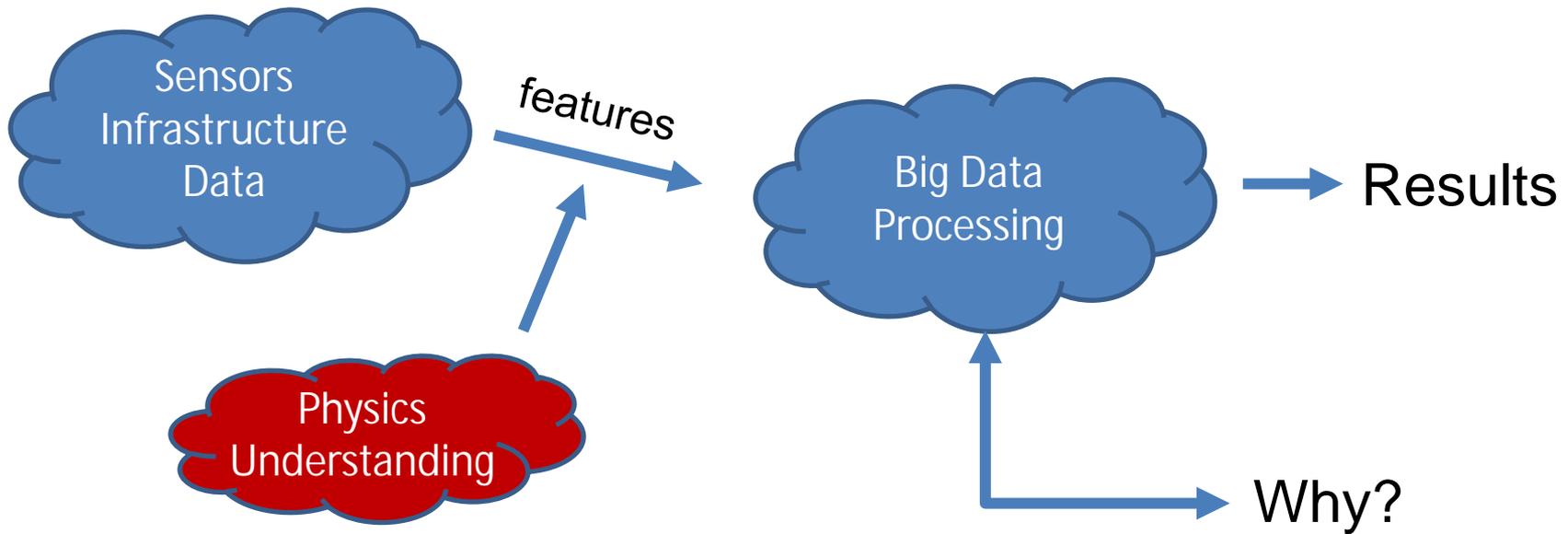
**Measurements for reactive and
Models for predictive control**

**Automated “enforcement” / interference control to
enable operations closer to the physical limits**

Directions in Propagation Understanding



The "Big Data" Answer for Measurement-based Modeling?



New Capabilities → New Challenges → New Opportunities

Sensor

Multi-Antennas

Macro-Spatial
Characteristics

HW Calibration

Directional
Transmissions

Large Corpus
of Devices

Distributed
Transmitters

Micro-Spatial
Characteristics

Geo-Data

Processing

New Models
“in situ”

Temporal
Characteristics