STAC Update:
Cloud Communications

Peter Nabicht
President, STAC
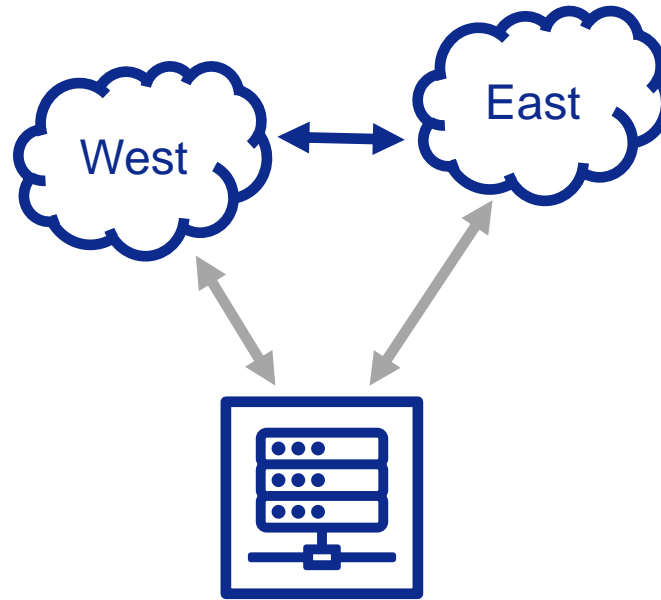
peter.nabicht@STACresearch.com
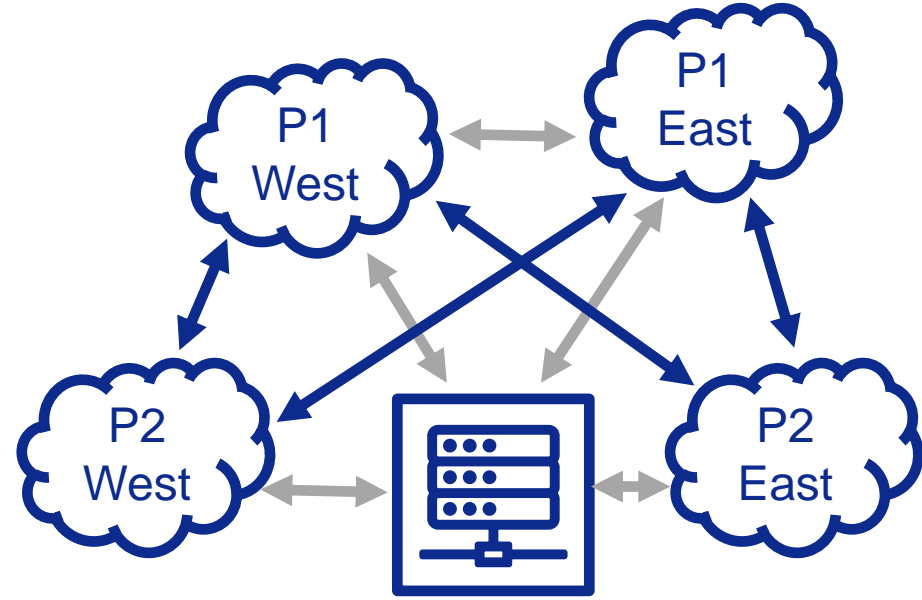
Cloud connectivity latencies

- For a given link, need to know:
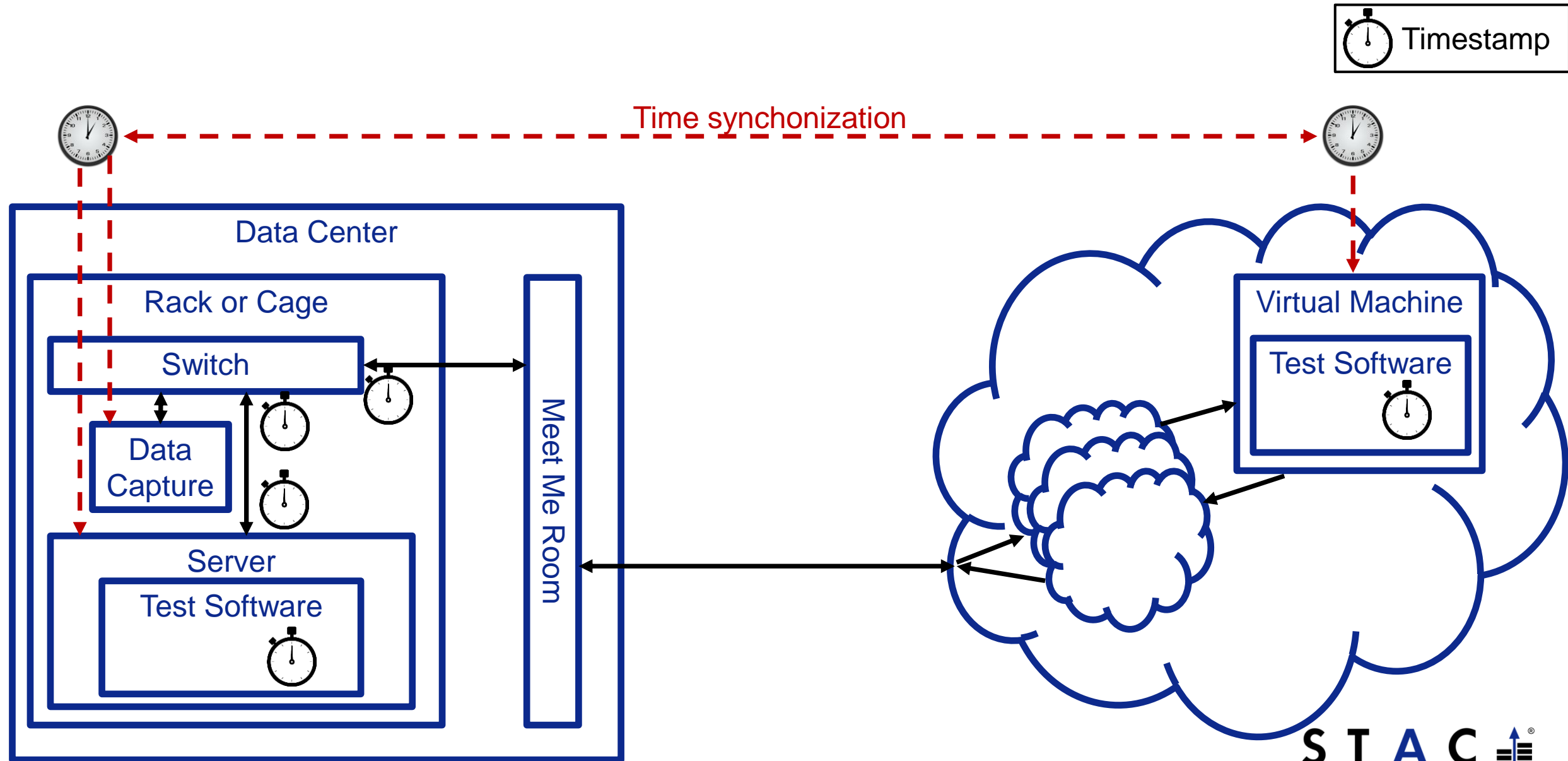 - Latency
  - Determinism
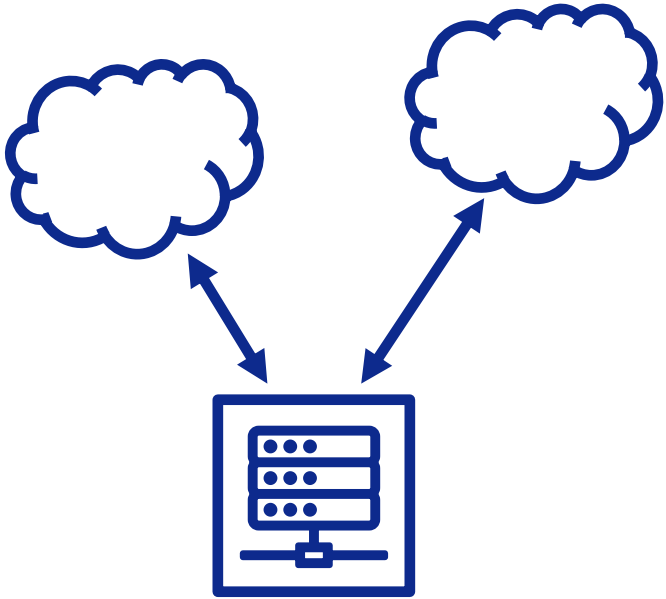
**On-prem
to Cloud**

**Cloud Region
to Cloud Region**

**Cloud Provider
to Cloud Provider**

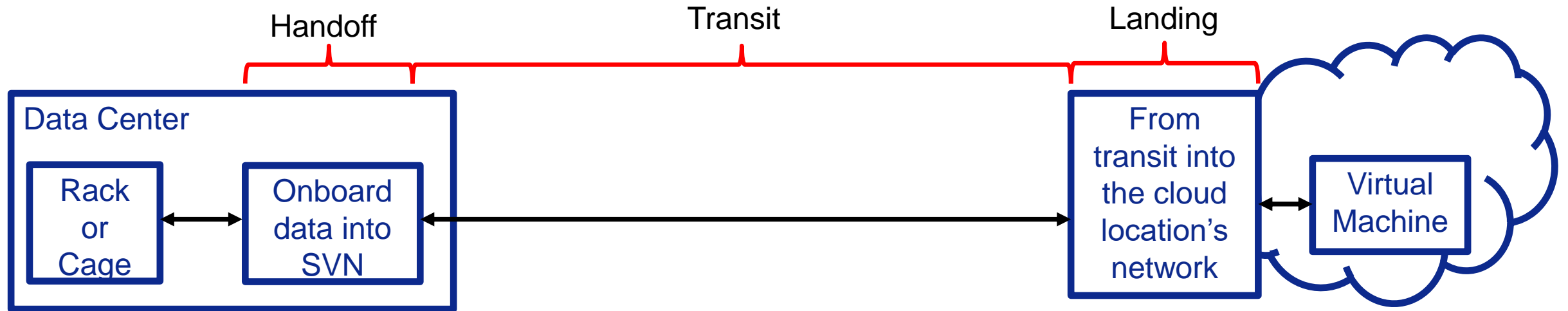# High-level diagram: on-prem to cloud

Breaks into three separate measurements of importance

- Handoff from physical network to SDN ("handoff")
  - At on-prem data center
    - Ex: handing cloud provider has a pop at the data center
  - At cloud
    - Ex: non-cloud provider network provider handing off at the cloud

- Landing zone ("landing")
  - At the cloud provider, where the data comes in from the long haul and gets into the cloud's data center

- Transit ("transit")
  - The communication from the data center to the landing zone
  - Complication:
    - Where is the handoff? How does that change?

Measurements: on-prem to cloud

Measurements: on-prem to cloud

Handoff

Transit

Landing
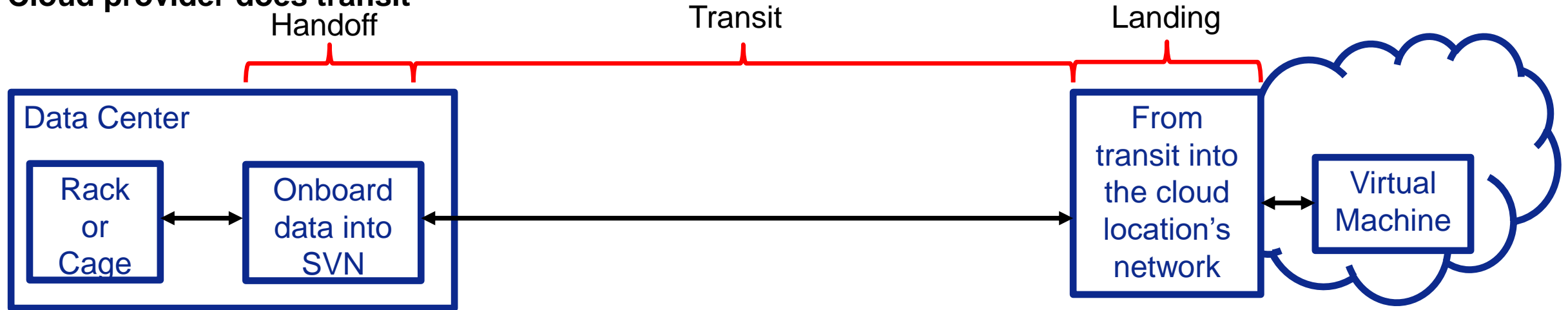
Data Center

Rack or Cage

Onboard data into SVN

From transit into the cloud location's network

Virtual Machine

But what about full path?

STAC
SECURITIES TECHNOLOGY ANALYSIS CENTER
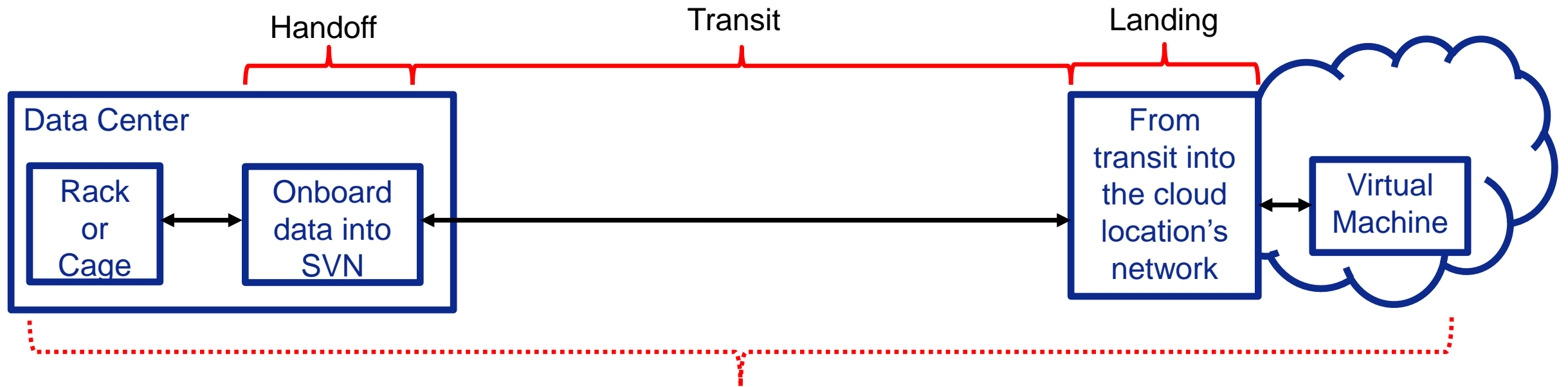
The challenge of the moving handoff

Cloud provider does transit

Handoff — **Transit** — **Landing**

Data Center

| Rack or Cage | ⟷ | Onboard data into SVN | ⟷ | From transit into the cloud location's network | ⟷ | Virtual Machine |

3rd party does transit

Transit — **Handoff** — **Landing**

Data Center

| Rack or Cage | ⟷ | Data to 3rd party provider | ⟷ | Onboard data into SVN ┆ From transit into the cloud location's network | ⟷ | Virtual Machine |

S T A C ®
SECURITIES TECHNOLOGY ANALYSIS CENTER
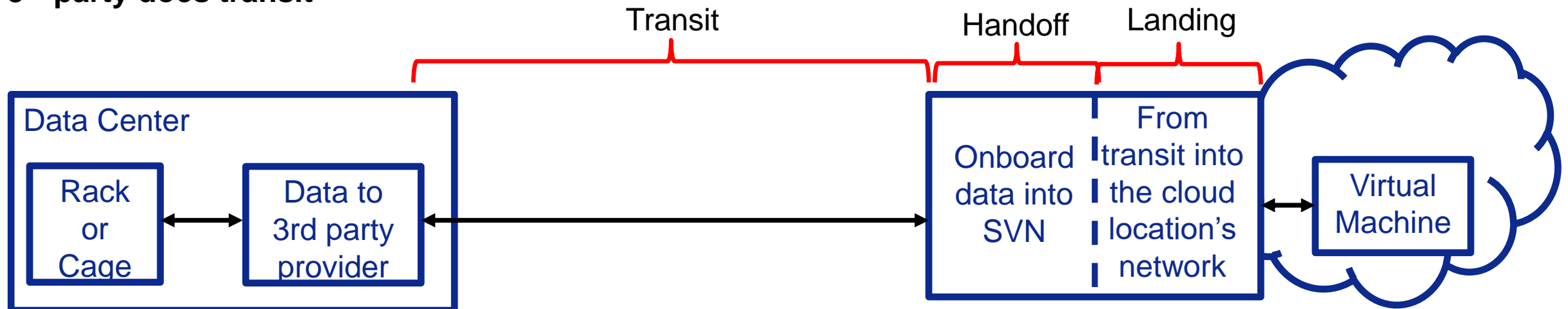
The challenge of the moving handoff & getting cloudier

Cloud provider does transit

Handoff — Transit — Landing

Data Center: Rack or Cage ↔ Onboard data into SVN ↔ From transit into the cloud location's network ↔ Virtual Machine

3rd party does transit

Transit — Handoff Landing

Data Center: Rack or Cage ↔ Data to 3rd party provider ↔ From transit into the cloud location's network / Onboard data into SVN ↔ Virtual Machine

S T A C ®
SECURITIES TECHNOLOGY ANALYSIS CENTER
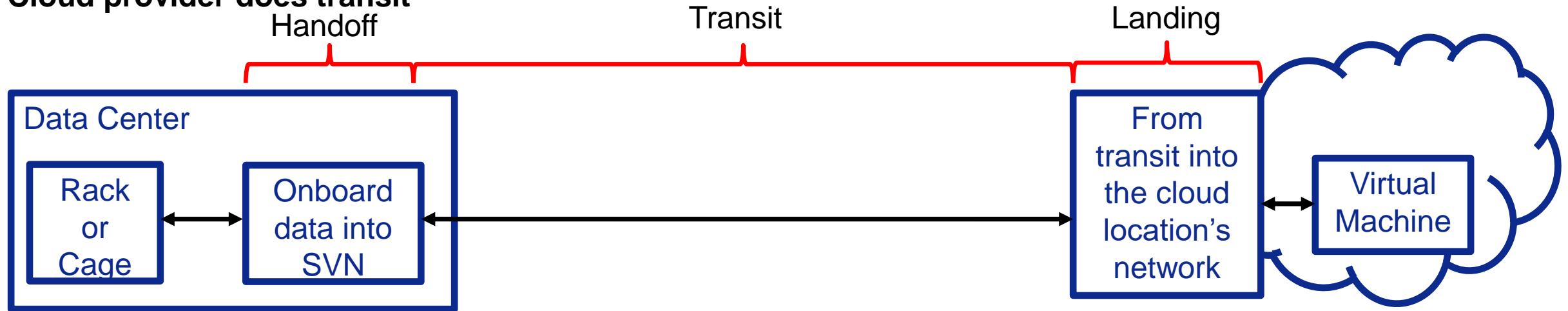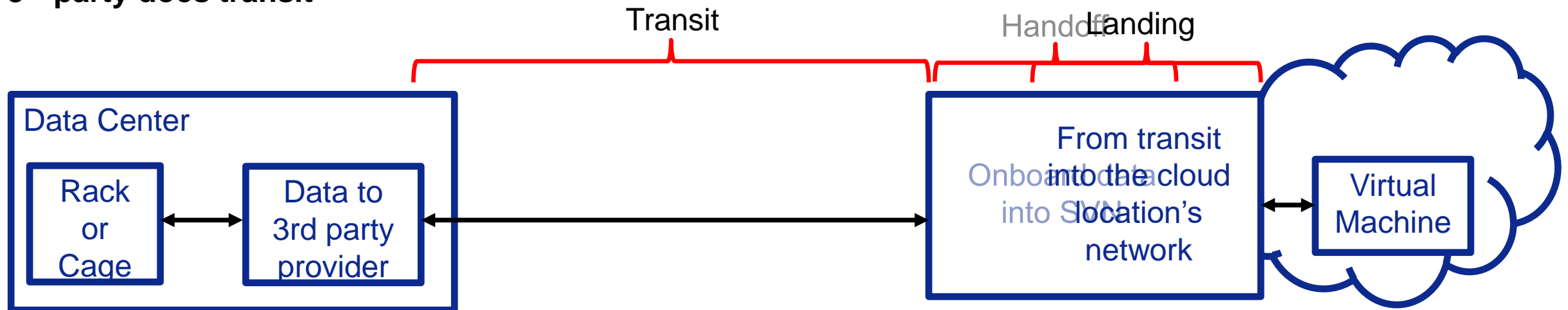
Next & future steps

- Next meeting second half of May
  - Refine the three different measurements
  - Define what time stamping is possible and break down into required and optional
  - While still allowing for apples-to-apples comparison

- Many requirements under discussion, including
  - Time sync, accurate time stamps
  - Hypervisor vs containers vs bare metal
  - How long to measure
  - How many measurements
  - Include getting to the VM? If so, how many VMs?

S T A C®
SECURITIES TECHNOLOGY ANALYSIS CENTER

If you are interested in helping define specifications…

council@STACresearch.com

STAC®
SECURITIES TECHNOLOGY ANALYSIS CENTER