Gap Analysis for IDentity EnAbled networkS

draft-xyz-ideas-gap-analysis-00

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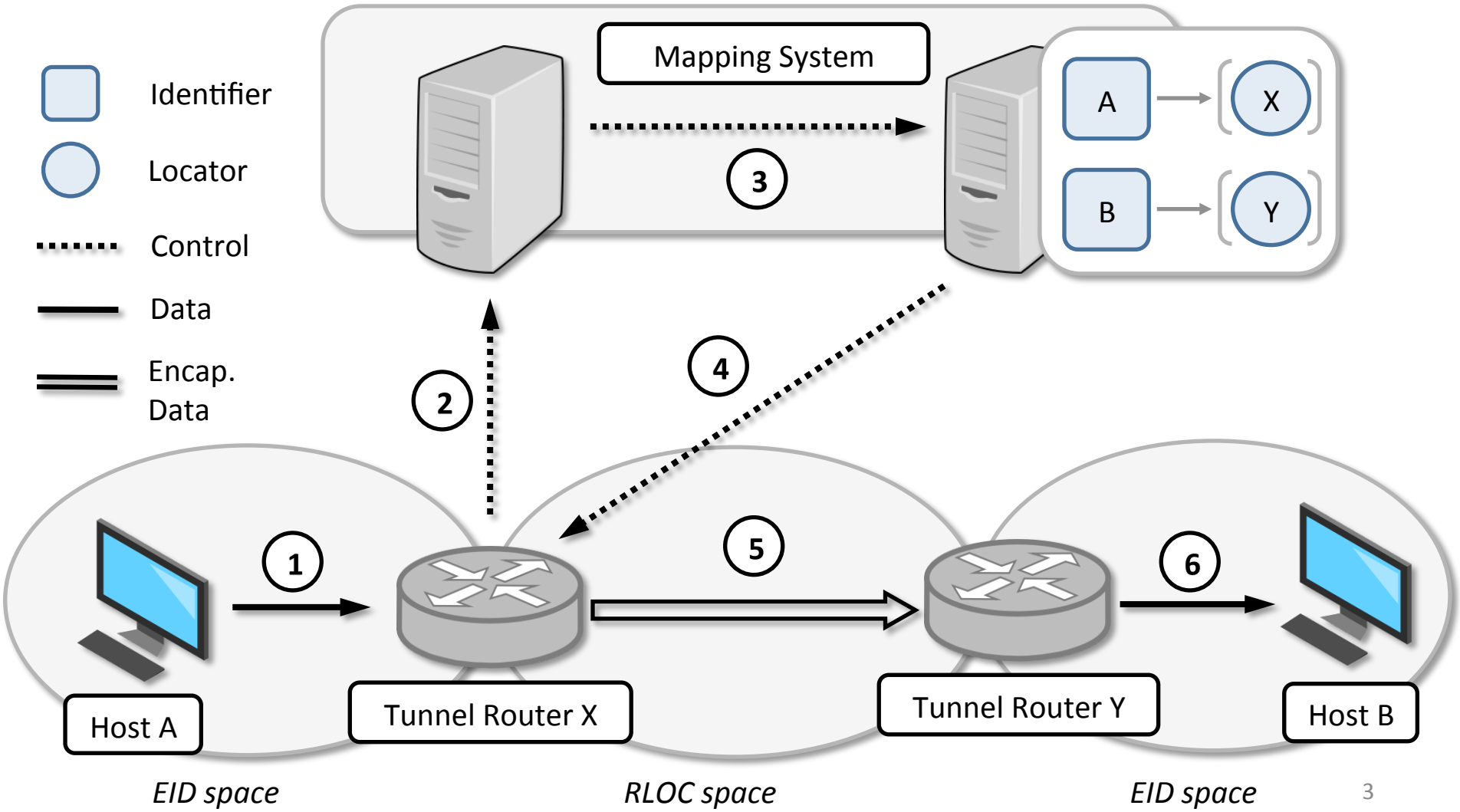
A Brief History of Identifier/Location separaton

- The realization that IP addresses have overloaded semantics goes back to 1993 [RFC1498]
- Solution: Identifier-Locator Split
- Over the years several protocols have followed this paradigm, as an example:
  - HIP (RFC 6537)
  - LISP (RFC 6830)
- Identifier/LOC protocol use an infrastructure to store the relation between the two namespaces:
  - LISP Mapping System
  - RVS in HIP

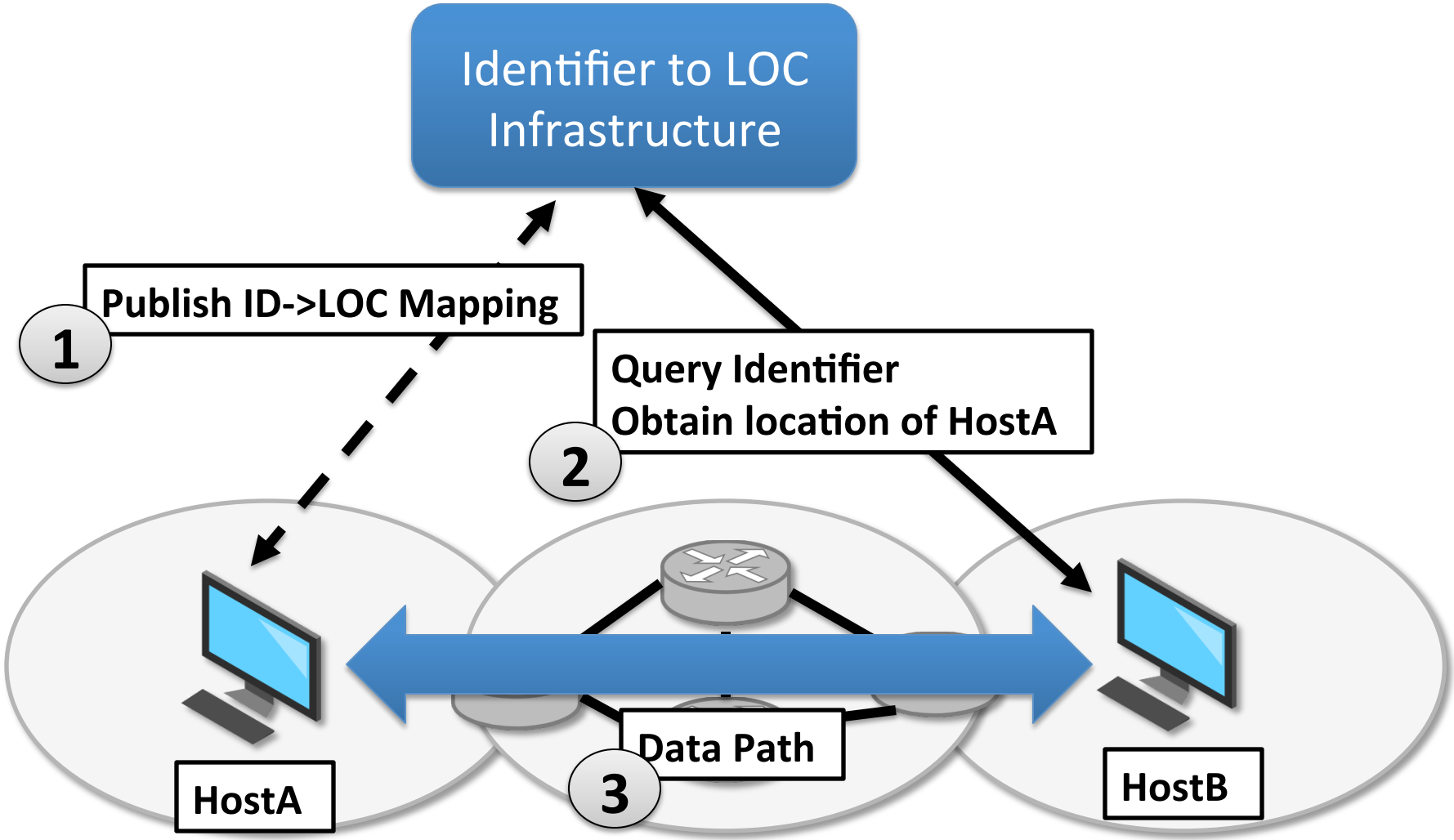
Locator/ID Separation Protocol



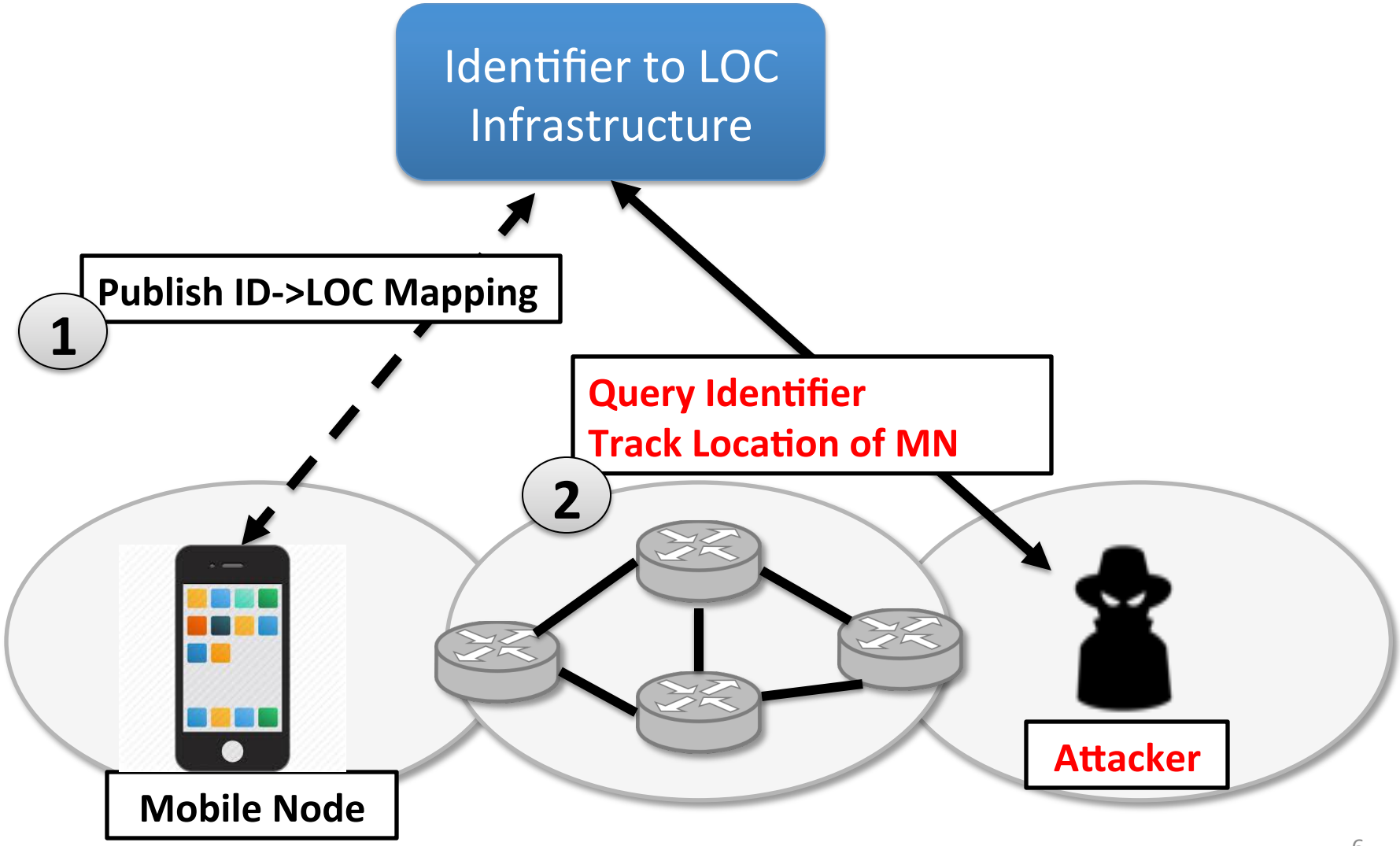
Host Identity Protocol

- **Bob's slides**

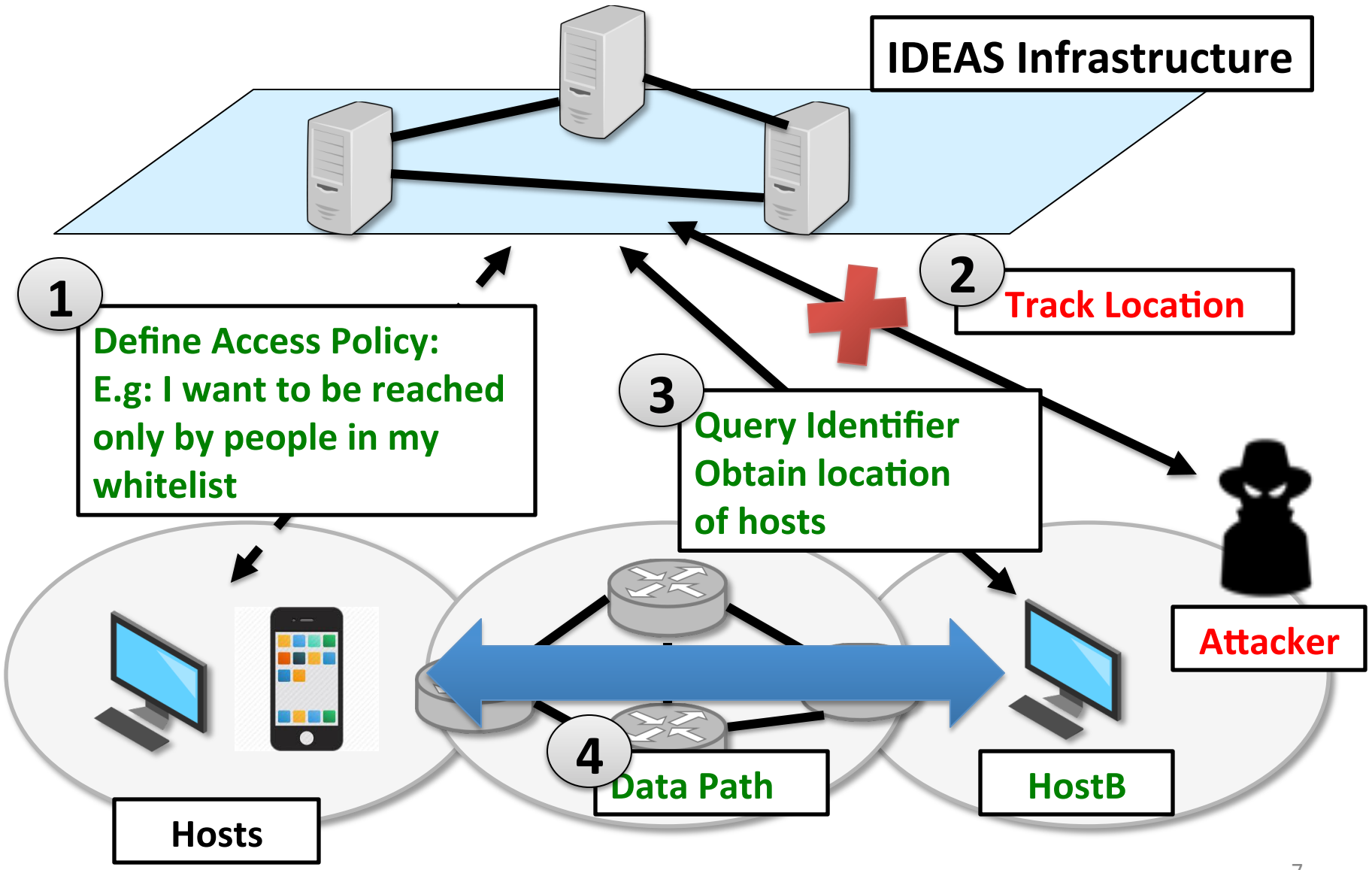
Common operation of ID/LOC protocols



Privacy: Tracking of Location



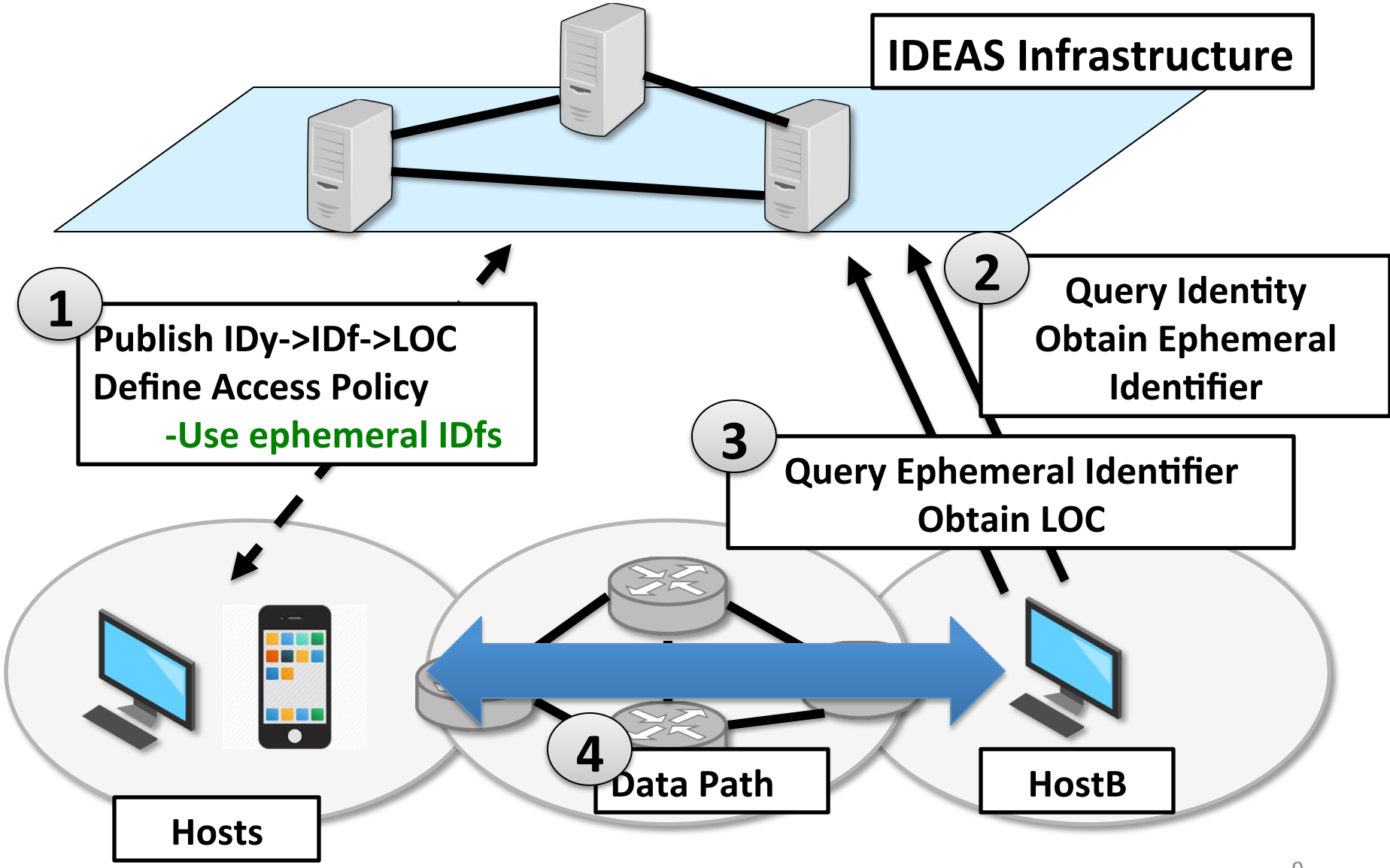
Privacy: User-Defined Access Control Policies



User-Defined Access policies

- **GAP**: Existing protocols typically assume that Identifier/LOC information is **public**
- IDEAS introduces the notion of **privacy:**
  - Support fine-grained access policies to enable custom disclosure of Identity, Identifier and Locator(s) information
    - Not system-wide policies
  - Access policy tied to host **identity**
  - Identity is unique per entity

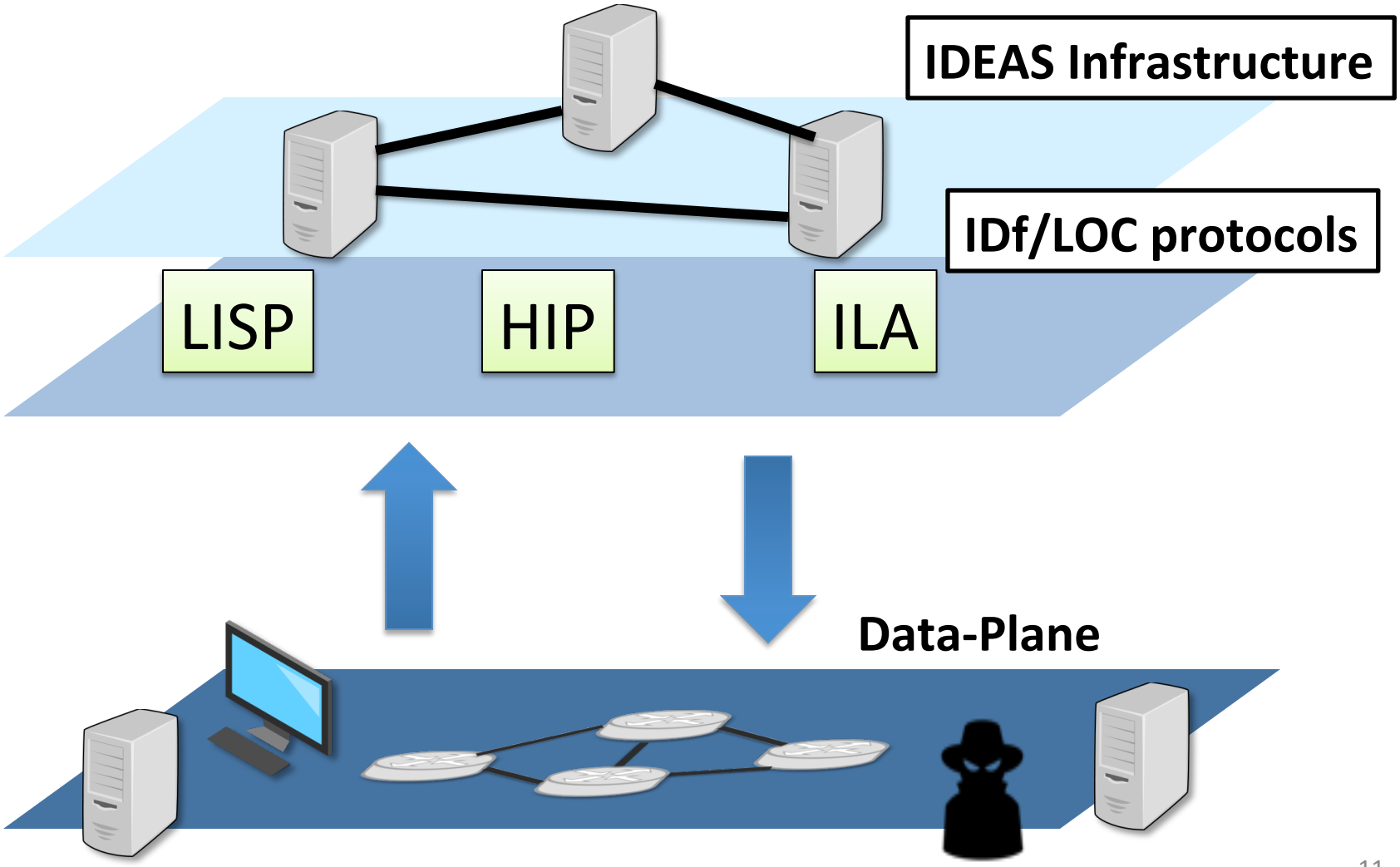
IDEAS introduces the notion of **IDENTITY**



Identity (IDy) and Identifier (IDf) Split

- **GAP**: In Identifier/LOC protocols:
  - Identifier uniquely identifies the end-host
  - LOC identifies the network interface
- IDEAS introduces the notion of **identity** (IDy)
  - Identity is unique per entity
    - Allocation policies for identity
    - Permanent
    - Never revelead over the wire
  - Identifier is used as a session ID
    - Ephymeral IDfs can be used
    - Can be used in clear
  - Locator identifies the network interface

Common Infrastructure



Common Infrastructure

- **GAP**: Existing protocols offer their own mapping service for IDf/LOC
- IDEAS introduces a **common infrastructure** for IDy/IDf and IDf/LOC mappings
  - Work with existing protocols
  - Consistent policies
  - Ease network management

Summary

- IDEAS introduces the following new requirements:
  1. The notion of **identity** with its own lifecycle and requirements.
  2. Strong requirements for **privacy** tied to the identity. This requires fine-grained user-defined access control
  3. A **common infrastructure** for IDy/IDf and IDf/LOC mappings