



** The COAST logo is based on the painting "Birds Eye View of Sea Coast" by Leonardo Da Vinci*

Content Aware Searching, retrieval and sTreaming in Future Internet

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Project Summary

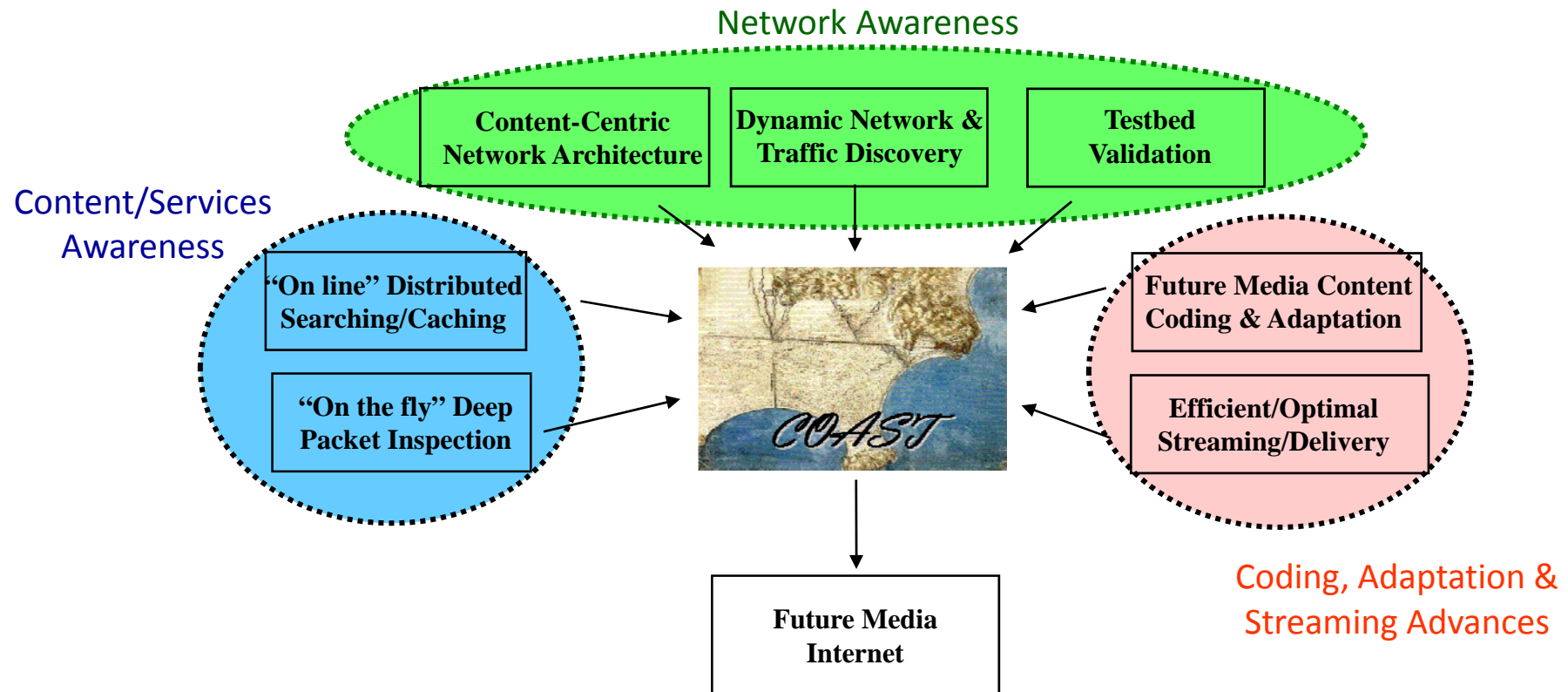
COAST aims to offer fast content-aware retrieval, delivery and streaming, while meeting network-wide Service Level Agreements (SLAs).

COAST will focus on 3 innovation pillars:

- **Content & Services Searching & Indexing.** Based on intelligent nodes, COAST will
 - *“on the fly” identify/classify content and identify Web services via inspection of the traffic that flows through the nodes (DPI & Signalling Analysis)*
 - *discover “on line”, where services are located and content is located/cached (Crawling)*
- **Content-Aware Delivery Network Architecture.** COAST will
 - *discover the underlying network infrastructure, the user terminal and the user needs*
 - *construct content-aware overlays to offer distributed, robust and network-/service-provider friendly content delivery, leading to improved PQoS.*
- **Future media content adaptation and enrichment.** COAST will provide for scalable, HD 3D/free-viewpoint video with interactive virtual panning/zooming, which will be on-the-fly adapted, enriched and optimized.

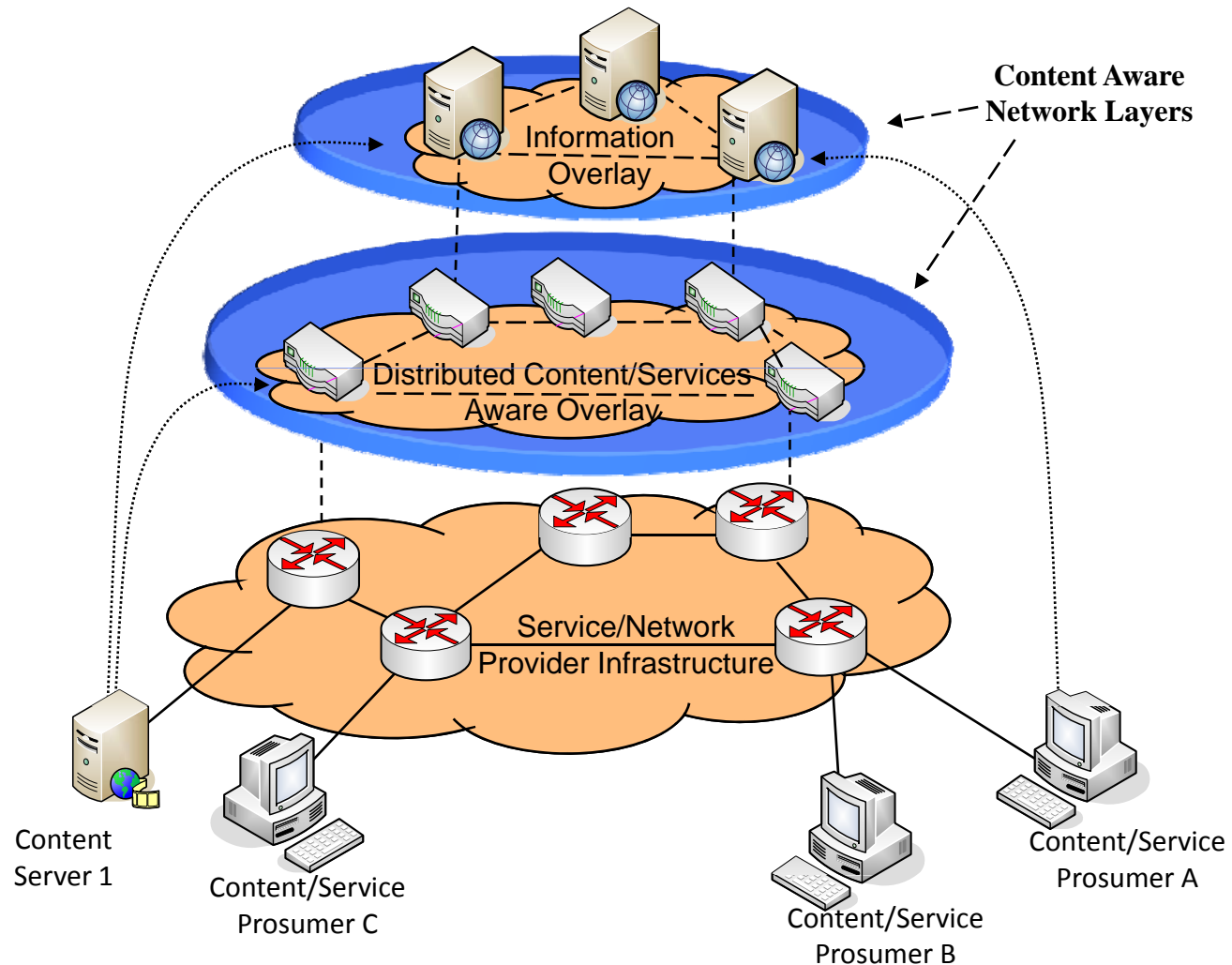


COAST Approach



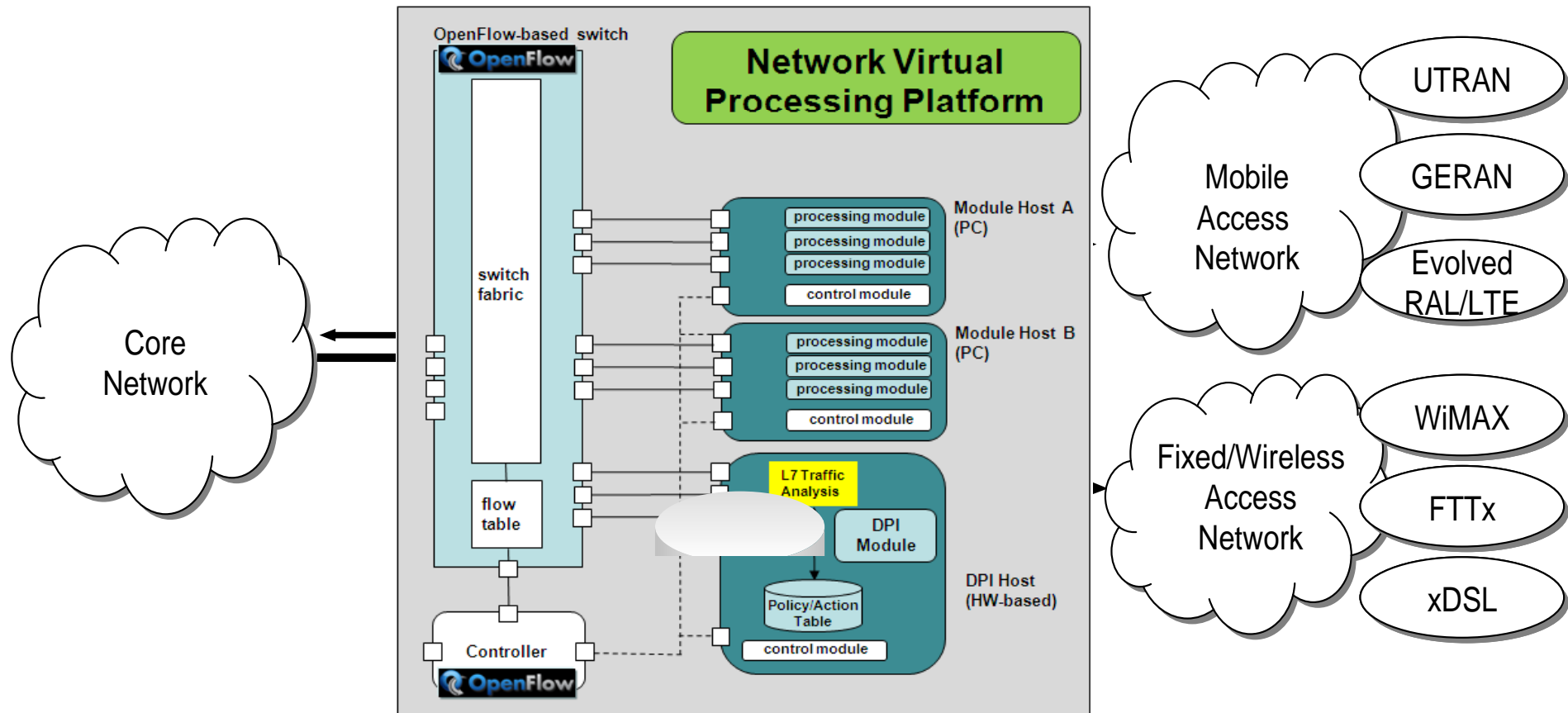


Network Architecture



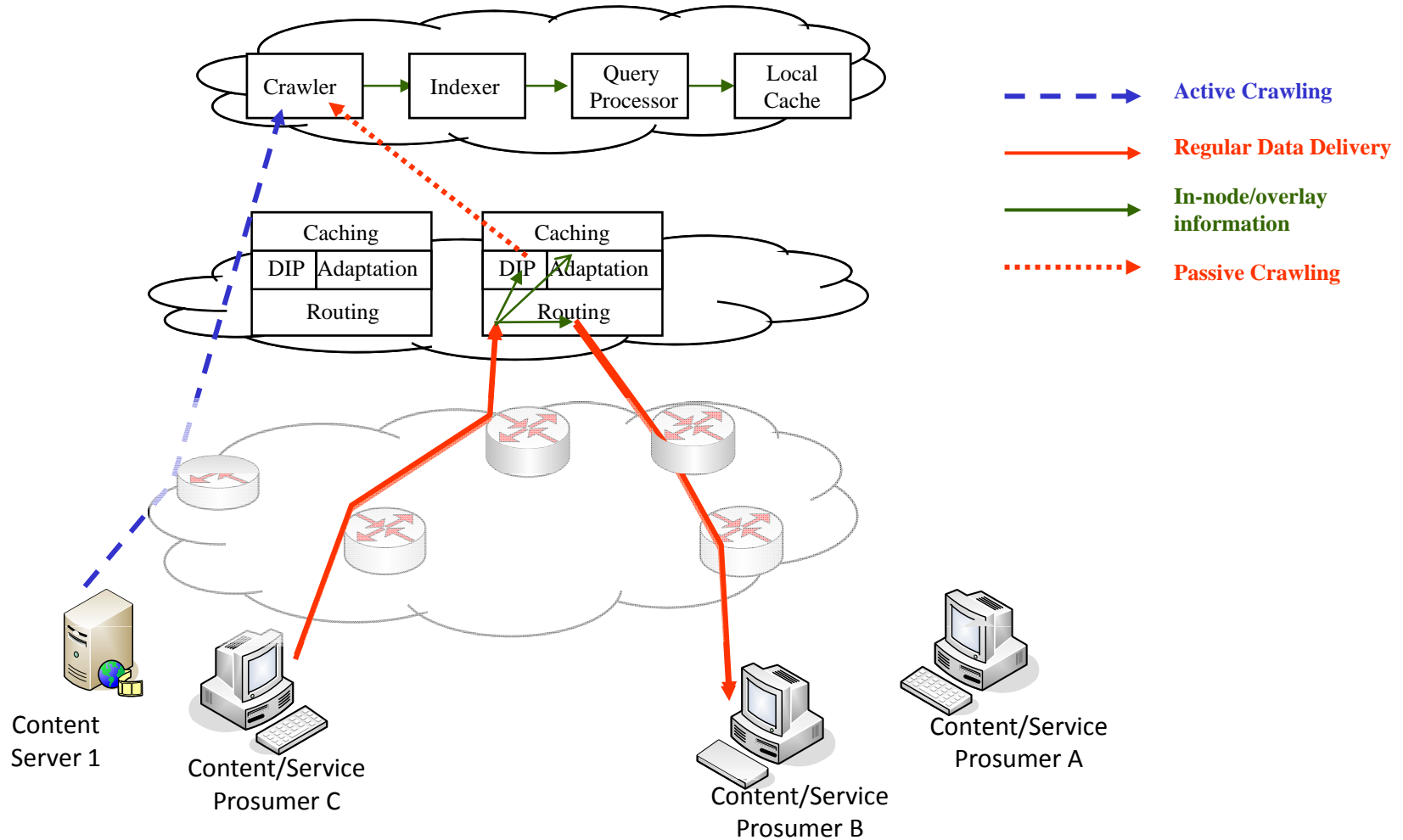


Content Aware Network Node





1: Crawling & Searching Preparation



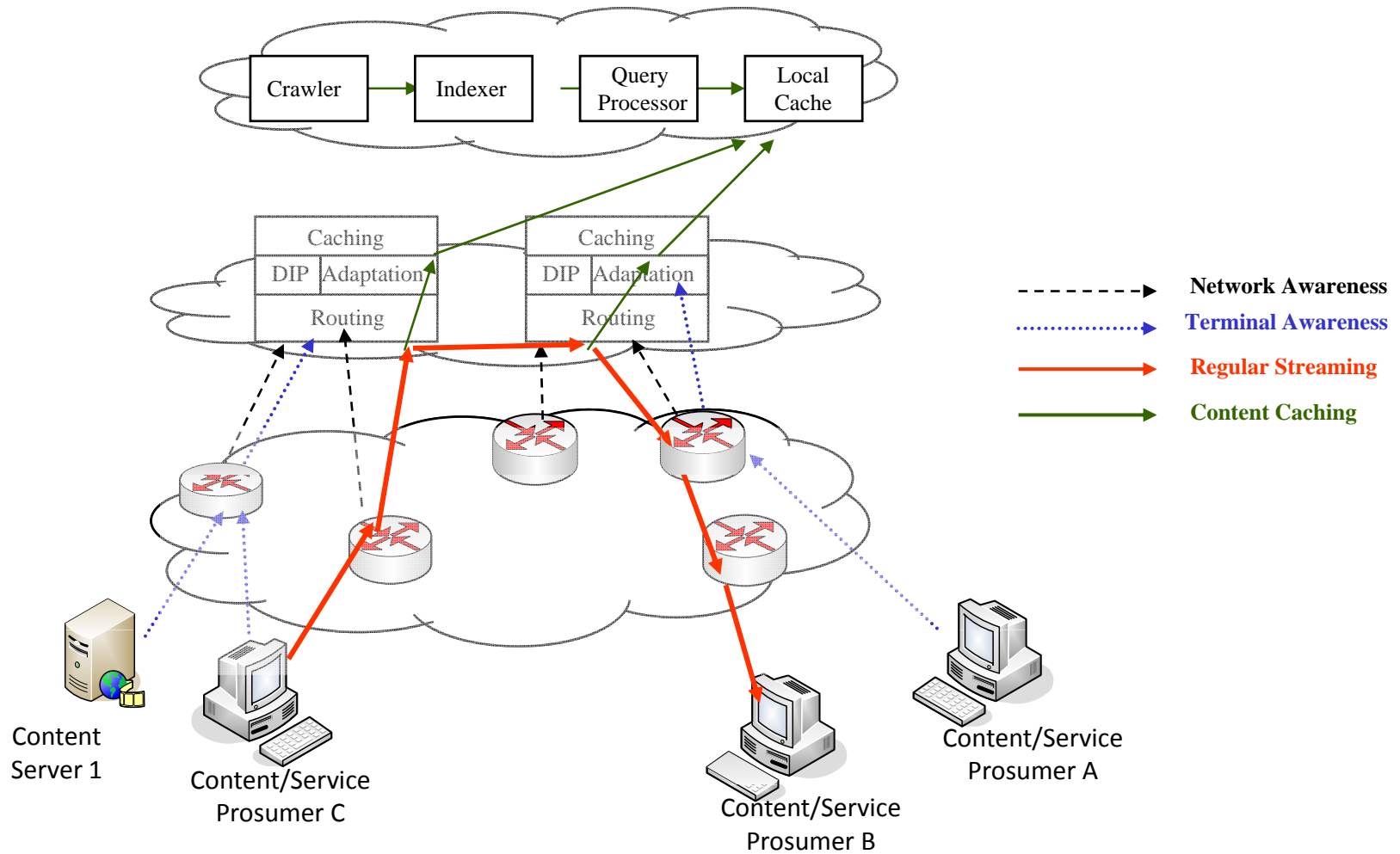


Crawling based on:

- Deep Packet Inspection
 - Identification of Digital Object Identifier (DOI), RFC 3651
 - Identification of video fingertip
 - Identification of simple patterns
 - Services based on the RESTfull paradigm
- Signalling Analysis
 - Analysis of SDP /RTSP set-up messages
- Retrieve Content Characteristics
 - ID/ownership
 - Type, encoding, size, fps, video quality, jitter
 - Popularity
 - Potential Caching location

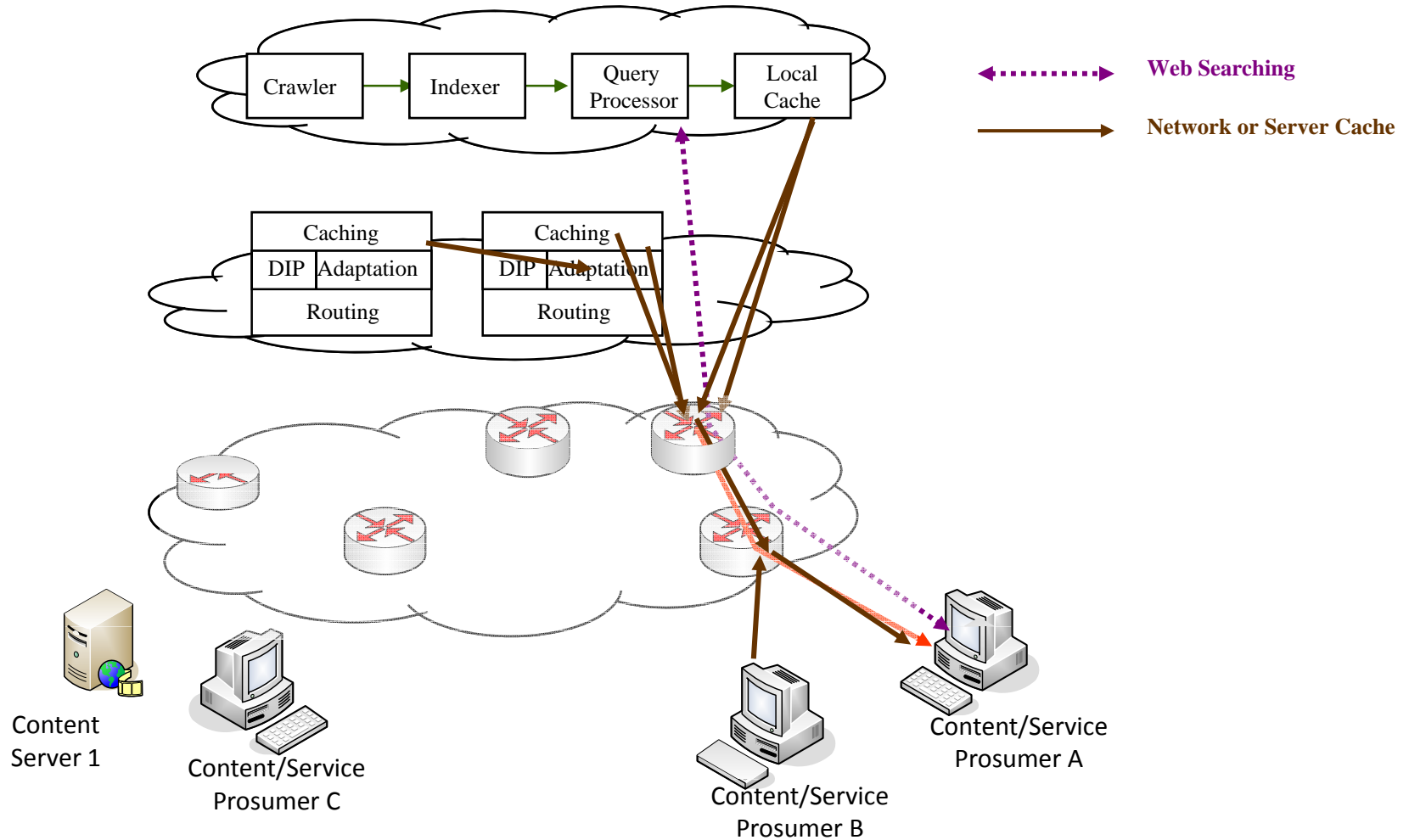


2. Network/Terminal Awareness & Caching





3. Searching, Streaming & Adaptation



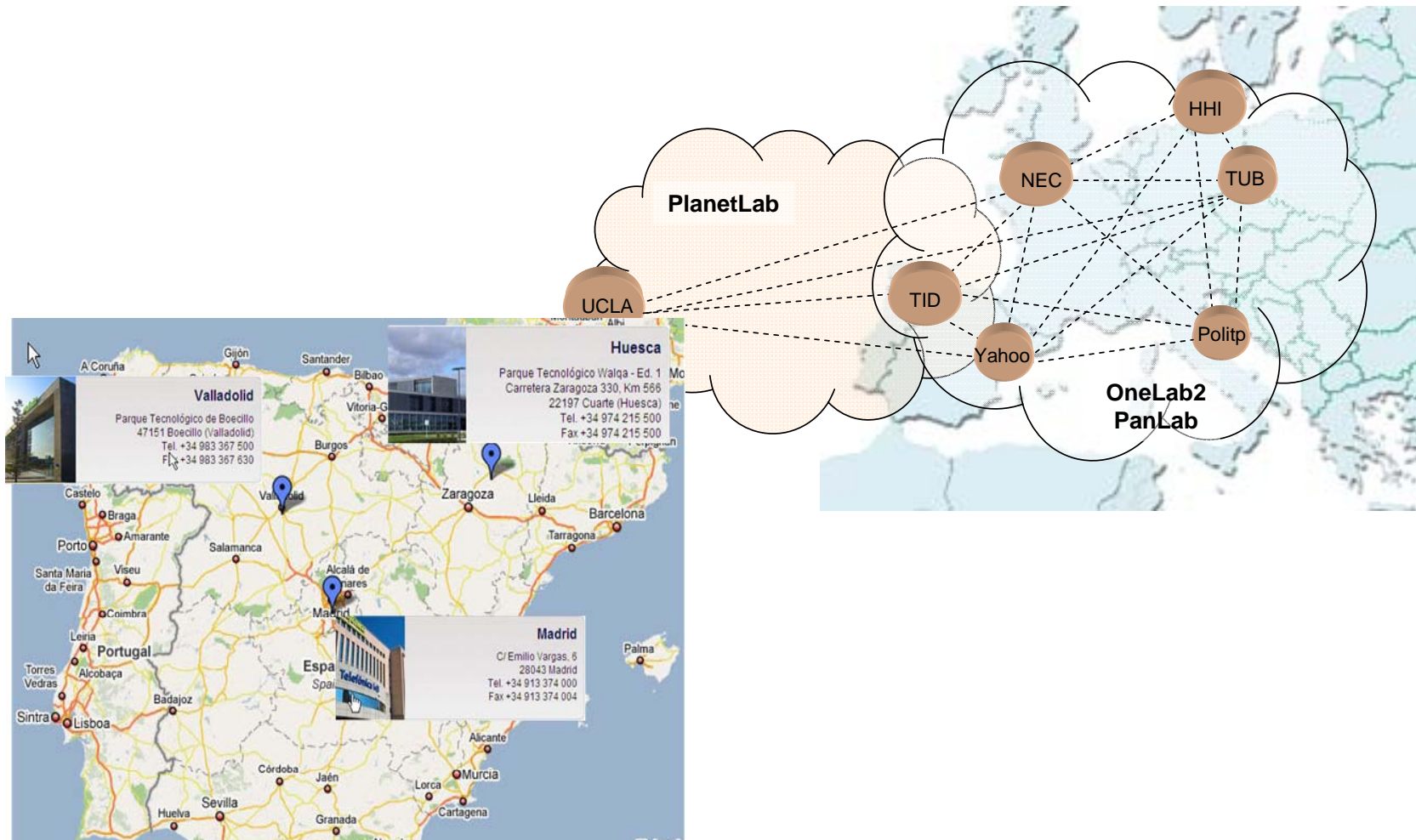


Context/Network Based Adaptation

- Select different video location/cache
- Select different video
- Select/create different streaming path
- Select/create different P2P overlays (multiple trees vs mesh)
- Select based on user terminal/location
- Select based on network type/quality/congestion
- Adapt content quality (HD 3D to QCIF 2D)
- On-the-fly free/multi-view, 3DV and interactive interactive zooming/panning



COAST Testing





Who is “COAST”

- ST Microelectronics (Italy)
- Synelxis Solutions Ltd (Greece)
- Yahoo! Iberia (Spain)
- NEC Europe Ltd (UK)
- Telefonica I+D (Spain)
- Fraunhofer HHI (Germany)
- Politecnico di Torino (Italy)
- Technische Universität Berlin (Germany)
- Fundacion Barcelona Media (Spain)
- University of California, Los Angeles (USA)
- Seoul National University (S. Korea)



9 Participants from 5 EU countries + 1 from USA and 1 from S. Korea
3 Industries, 1 Operator, 1 SME, 4 Research Institutes, 2 non-EU participants