

## A Context-Adaptive Content Ecosystem under Uncertainty (CONCERT)

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## **Project Overview Project Output** To devise and evaluate a context-aware content ecosystem 16 published papers to holistically manage and exploit uncertainties in future, 5 journal papers dynamic, content-oriented network environments. 11 conference papers Ecosystem to be based on information-centric networking Organization of the MuSIC Workshops 2015 and Centered on information (what) instead of host (where) 0 2016 (Multimedia Streaming in Information-Centric Content-based resolution and delivery based on names 0 Networks) Support intrinsic in-network content manipulation (data Low-cost ICN testbed using Banana Pi routers caching/storage and processing) Open access to a new DASH/SVC dataset Uncertainties: Requirements (application/service 0 Open source tool chain for DASH/SVC requirements), threats (network anomalies) and opportunities (performance enhancements) **Multi-RAT Video Streaming** Information Spreading Modelling Scheduling Novel universal path-based Decision Engine Novel concurrent multi-RAT video information spreading streaming solution for SVC-DASH Segment/Lave Network modelling framework Contex Takes network and buffer/QoE Download Decision 0 Takes into account routing context into account to ensure: protocol, traffic intensity and fer/QoE Smooth & high quality **RAT Selection** Context Decision distribution and network playback topology Efficient use of multi-RAT ent/Laye Lte Identification of an epidemic st Through network resources Selected RAT survival threshold Peer Content- and are Network D.C.C CCR Dec COR You Tube CO Content- and NETFLIX Context-aware Core Network Deg m Deg C DAG ° DSI CC **Stochastic Adaptive Forwarding in NDN Context-aware DASH Representations Optimisation** Stochastic Adaptive Forwarding DASH representatio (SAF) of Interests: Content Store CCR learns network status Droppin Face representation CDN preparations upstream (i.e., builds context) by • HTTP observing Data packets that \_vi<u>tu al</u>\_ physicai origin serve return (or do not return) in 70 response to Interests Context-aware DASH representations optimisation Multi-path transmission in NDN

- Coding parameters based on the context (populations, exploited to circumvent potential uncertainty on users requests, video)
  - Better usage of the resources compared to recommended sets

faceboo

amazon

nt Distrik

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huluplus





congestion and link failures

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