Software Defined Privacy-Preserving Measurement Instrument and Services

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Overview of IRNC AMIS Project

- Objectives
  - 100Gbps flow-granularity network measurement instrument
  - Software defined measurement
  - Preserving privacy of network flow info
  - In-depth flow analytics
- Project Team:
  - Yan Luo, PI, University of Massachusetts Lowell
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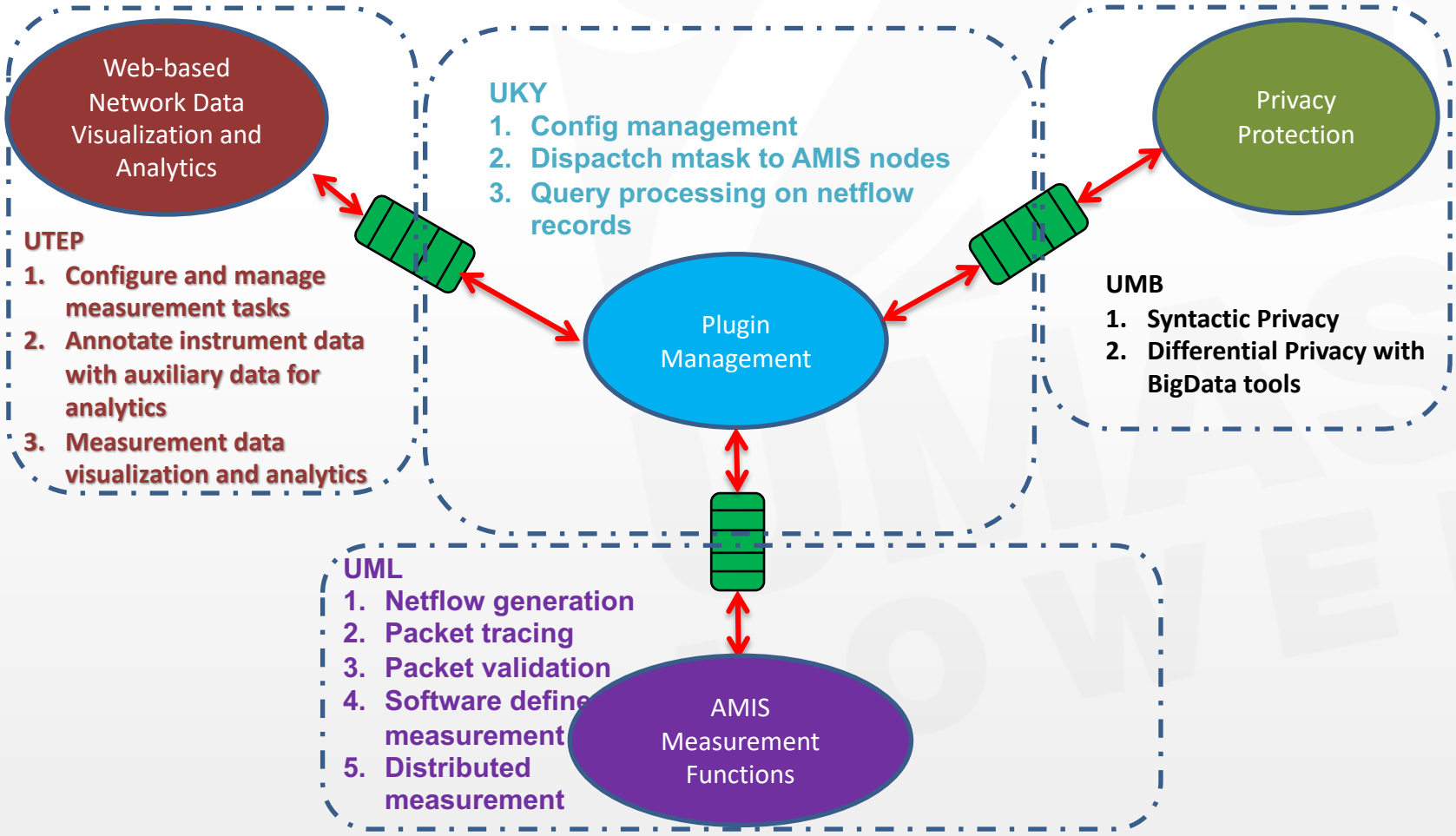
Overview of IRNC AMIS Framework



AMIS Measurement Functions

- Sample Functions
  - Netflow
    - Generate NetFlow record by OpenVSwitch
  - Ares
    - An enhanced Argus, which utilizes DPDK and RSS to boost measurement performance.
  - Active Measurements
    - Use the existed tools of the perfSONAR to measure the network performance, for example, bwctl for the throughput.
  - Packet Tracing
    - Trace the occurrence of flows/packets on links monitored by (distributed) AMIS instrument

AMIS Measurement Functions

- Ongoing work
  - Equery Language
    - An event driven language which simplifies network monitoring
    - The front-end is an extension to SQL and the back-end talks to the Ares
  - Web GUI for AMIS Instruments Status
    - A web GUI which reflects the current status for each AMIS instrument

SC17 NRE Demo

- Two prototype systems deployed: StarLight and Ampath
- Demonstrate live 100G traffic measurement of data intensive flows