

# WP2: Experimentation

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measurement and architecture for a middleboxed internet

measurement

architecture

experimentation

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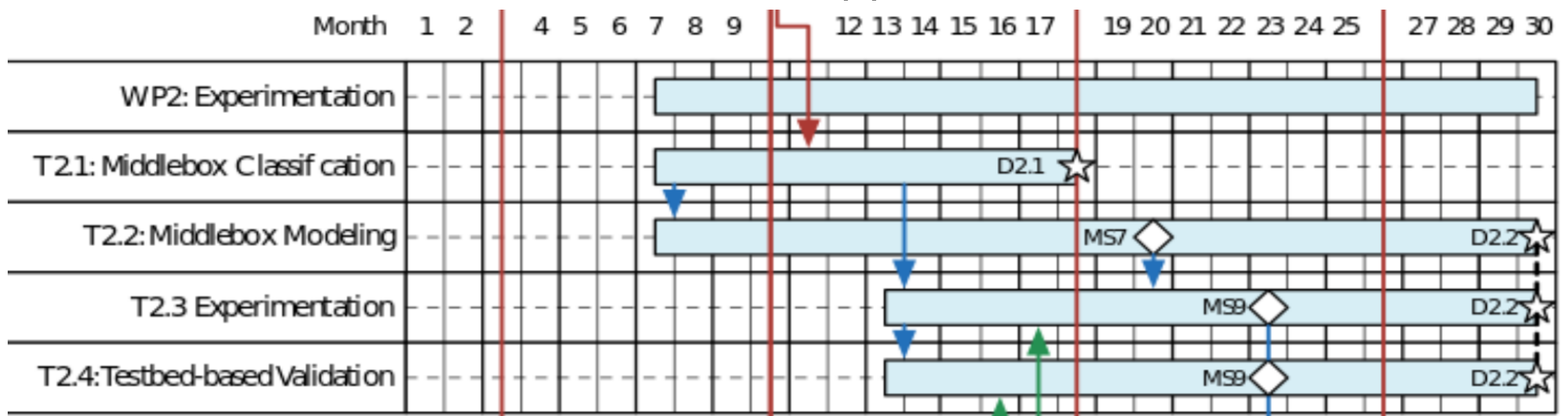
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# WP2 recap

- Starts July 2016
  - T2.1 Middlebox Classification (ULg, Aberdeen, SRL)
  - T2.2 Middlebox Modeling (ULg, TID)
- Starts January 2017
  - T2.3: Model/NFV-based Experimentation (ETH, Aberdeen, SRL)
  - T2.4: Testbed-based Validation Approach (ETH, Aberdeen, SRL)





# WP2 Early Plan Overview



- Data
- Classification
- Class models

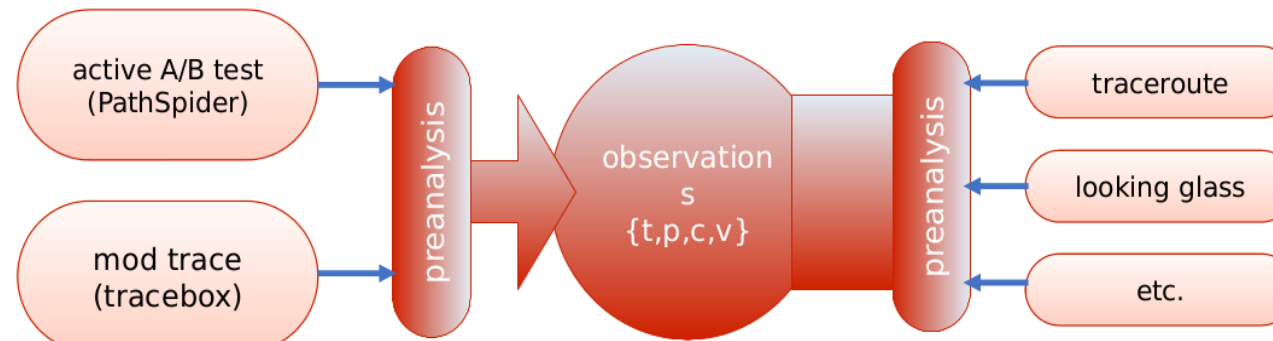


# Tracebox Datasets

- Collected data:
  - PlanetLab
- Being-collected data:
  - Ark (IPv6)
- To-Be-Collected data:
  - RIPE Atlas
- Additional data (SRL):
  - MONROE, NORNET

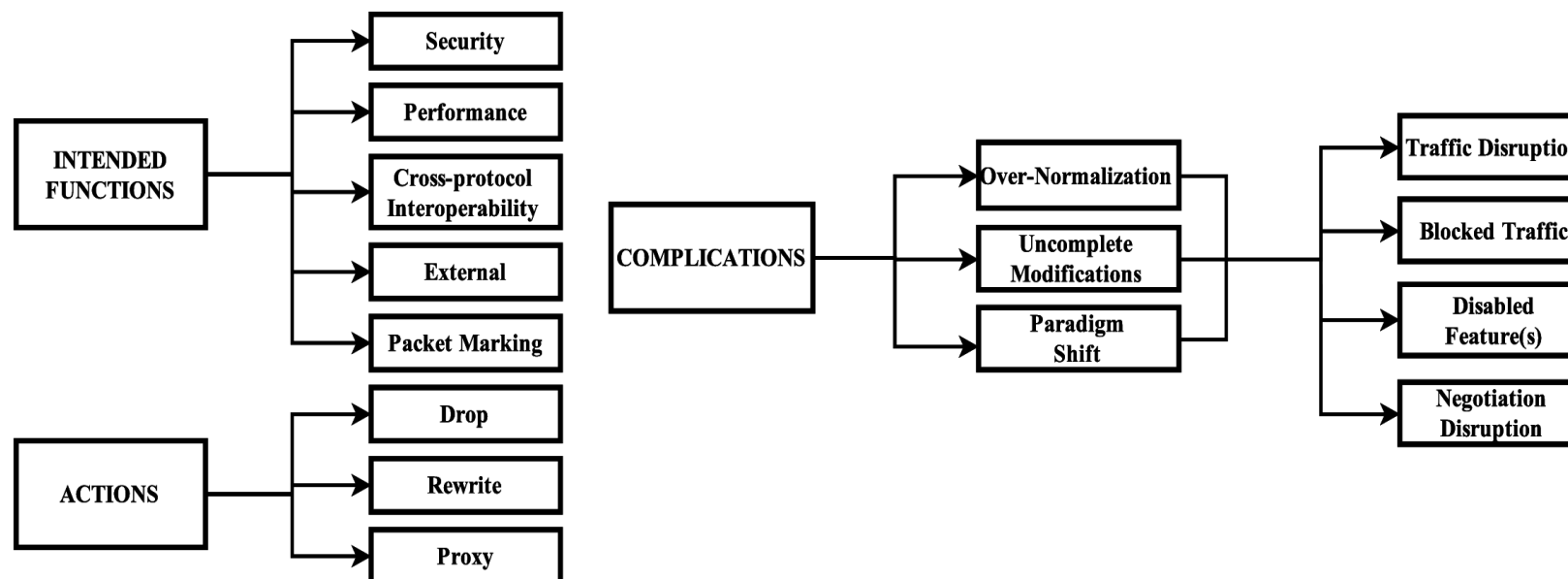


# Classification



- Common data model for all *observations* of path conditions
- **t**: time of observation
- **p**: path to which observation applies
- **c**: condition observed, e.g. “feature X  $\Rightarrow$  packet loss”
- **v**: vector of condition-specific values

## • Policy Taxonomy:





# Classification

Extend with:

- Persistence (Temporal aspect)
- Positionning (Location on the path)
- Carpenter, B., & Brim, S. (2002). Middleboxes: Taxonomy and issues (No. RFC 3234).
- Edeline, K., & Donnet, B. (2015, April). Towards a middlebox policy taxonomy: Path impairments. In 2015 IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS) (pp. 402-407). IEEE.
- Planned PAM16 submission
- Any help is welcome (Aberdeen, ...)
- D2.1: Middlebox Classification and Initial Model (June 17)



# Modeling

Tools:

- Netkit/Netkit-NG
  - [http://wiki.netkit.org/index.php/Main\\_Page](http://wiki.netkit.org/index.php/Main_Page)
- Netkit + Click (MBTest)
  - <https://bitbucket.org/bhesmans/mbtest/src>
- Mininet (Any experienced user ?)
  - <http://mininet.org/>
- CliMB (HotMiddlebox16, 26/08) + Mininet



# Summary

- T2.1 MB Classification:
  - Data Analysis and Classification: ULg, Aberdeen ?, Any
  - Mobile Data Collection: ULg, SRL
- T2.2 MB Modeling:
  - Implementation Practicability Analysis: All