

ARCA: Autonomic Resource Control Architecture

NFV: Network Function Virtualization

NS: Network Slicing

AREBA: NFV platform based in OpenStack

EXT: Remote (external) NS platform

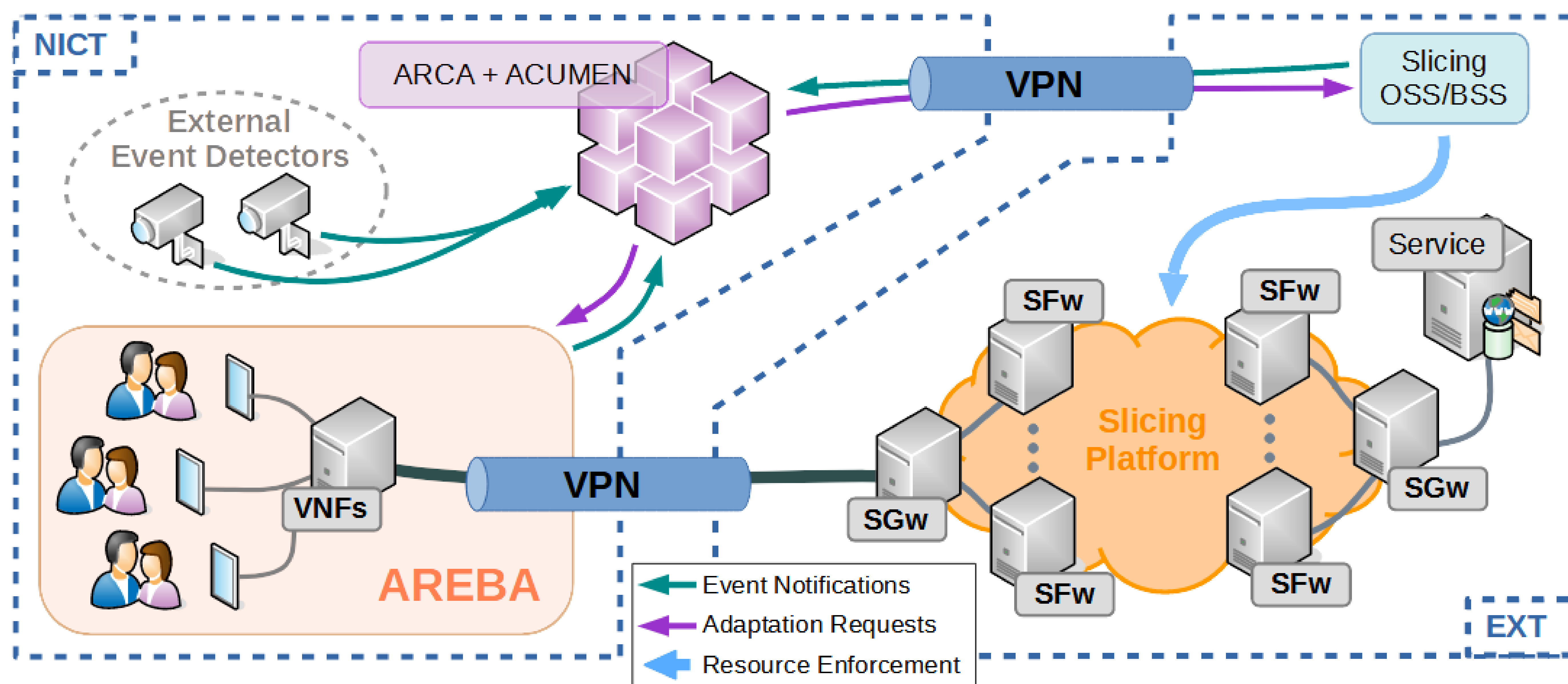
VN: Virtual Network

VNF: Virtual Network Function

AI: Artificial Intelligence

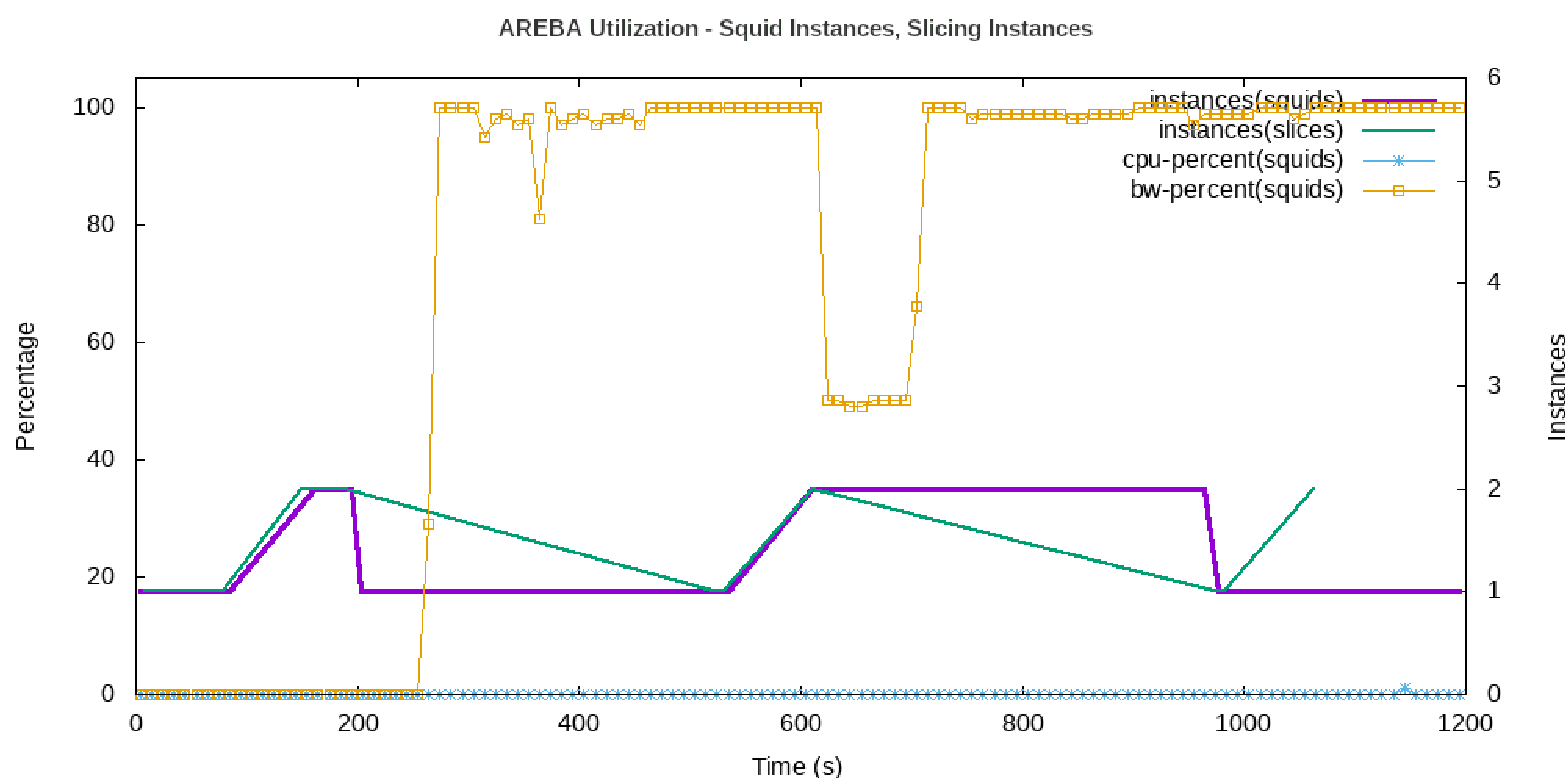
ACUMEN: AI methods that find the number of VNF instances and NS capacity needed by a VN.

ARCA manages VNs based on NFV and NS technologies



Experimentation Workflow and Results:

- ▶ ARCA receives notifications and performance metrics about the VN from both AREBA and EXT.
- ▶ ACUMEN correlates events and metrics and to find the requirements for AREBA and EXT.
- ▶ ARCA enforces the changes to AREBA, directly, and EXT via the OSS/BSS interface.



When ARCA+ACUMEN detect low bandwidth usage, they request the VNF instances and NS capacity to be lowered ($t = 200$). Then, when the bandwidth usage increases, both VNF instances and NS capacity are raised ($t = 550$) to keep the bandwidth on target ($t = 600$).