Intent-driven Autonomous Networks

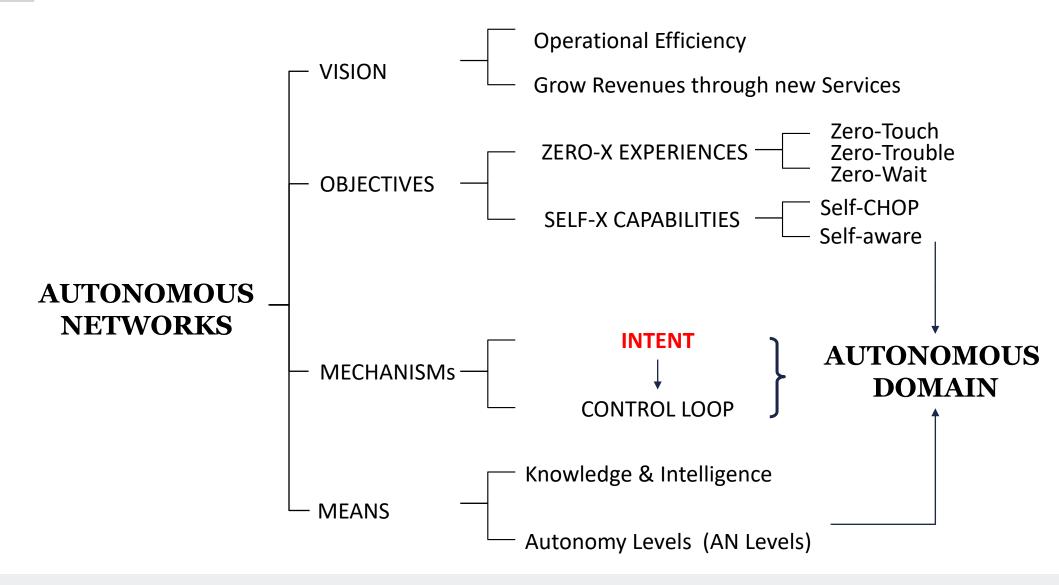
Kevin McDonnell

Senior Director, Intelligent Automation, Huawei
14th January 2022



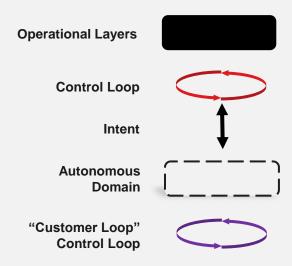
Autonomous Networks

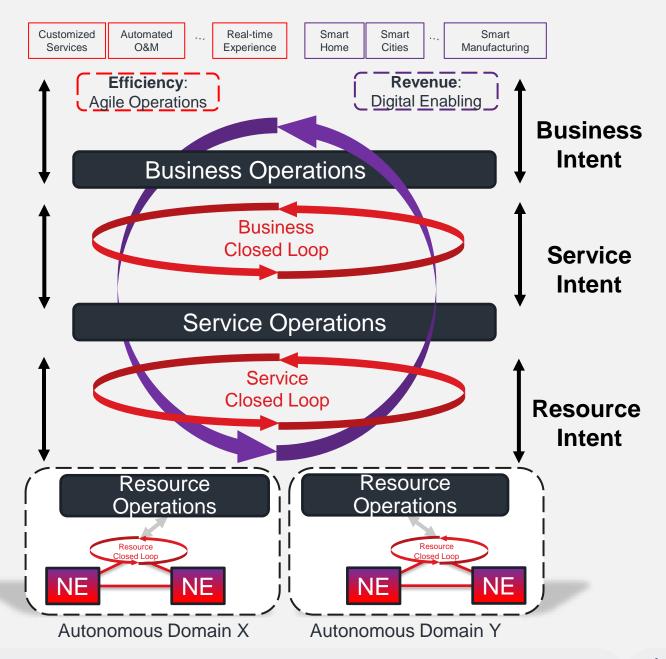
Concepts





Autonomous Network Framework







AN Reference Architecture



Architectural Principles IG1251



01: Decoupled operations layers for operational flexibility

02: Intent-driven, open interfaces

03: Closed Loop
Automation

04: Endogenous Intelligence

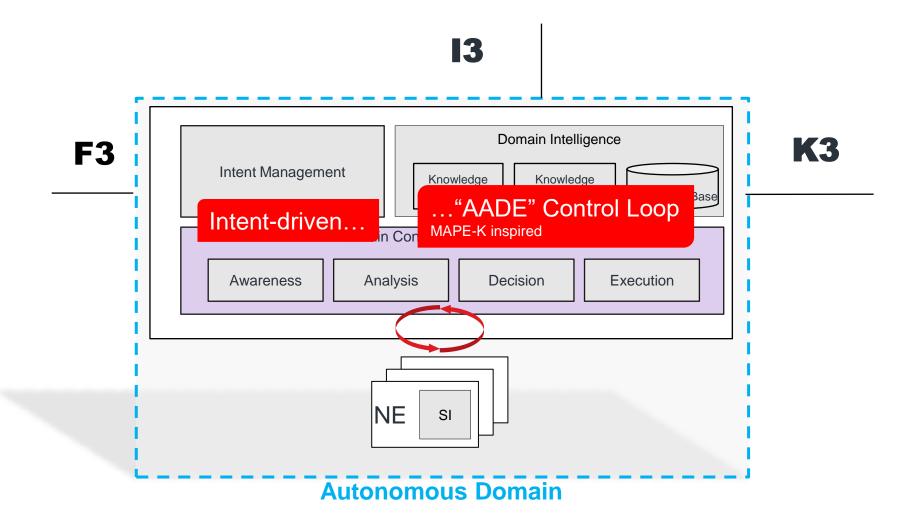
05: Single-Domain Autonomy



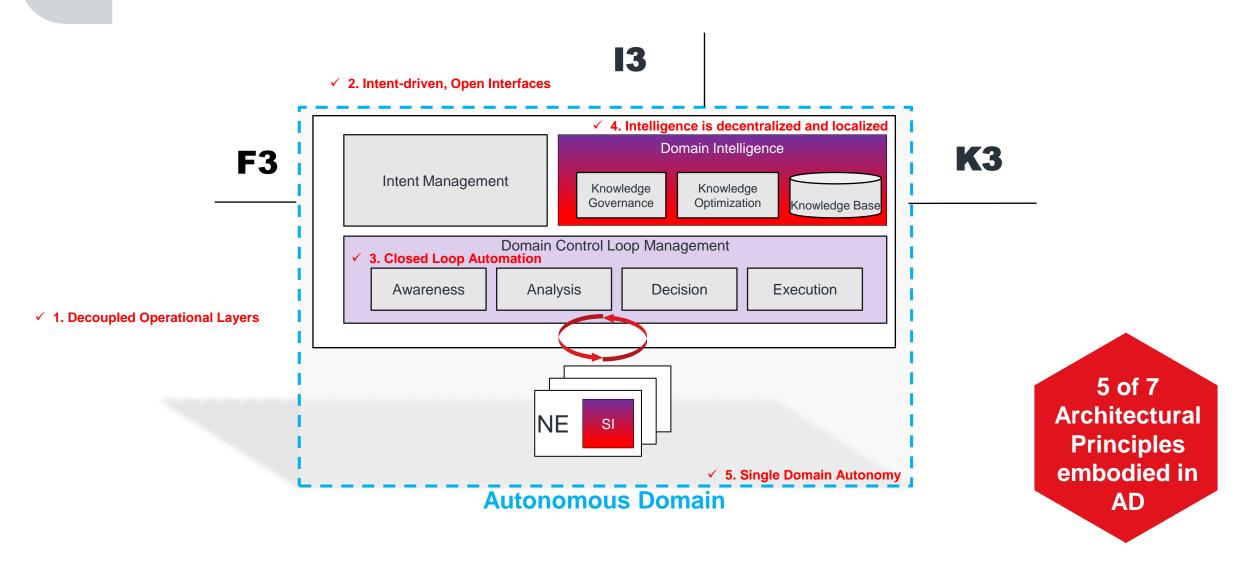
06: Cross-Domain Collaboration

07: Supports
interactions between
Autonomous
Domains of different
Autonomy Levels

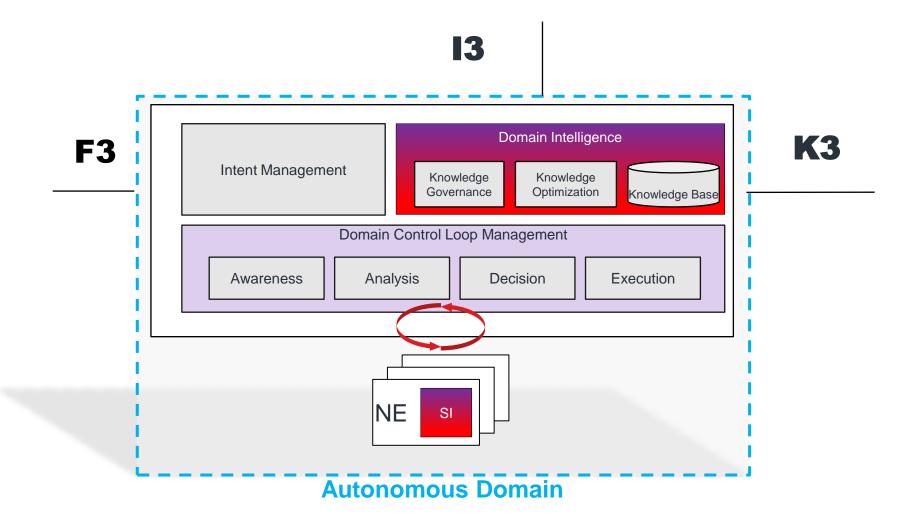
Autonomous Domain



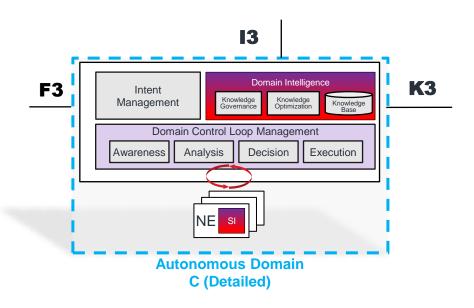
Autonomous Domain (AD)



Autonomous Domain



Reference Points

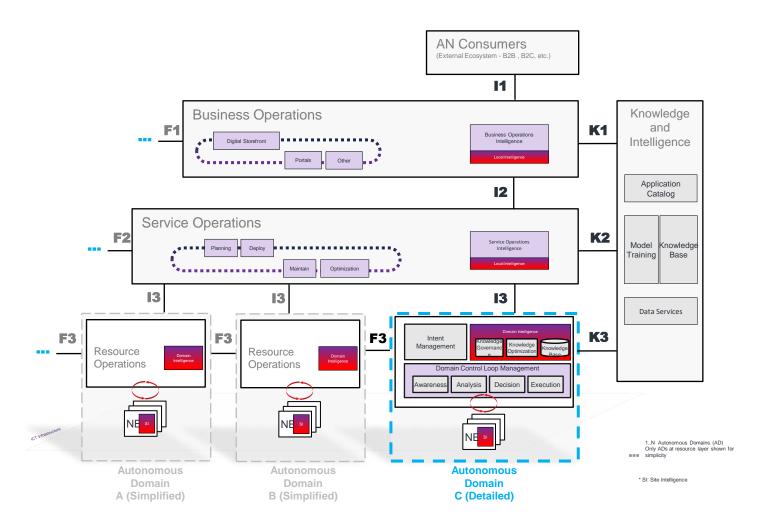


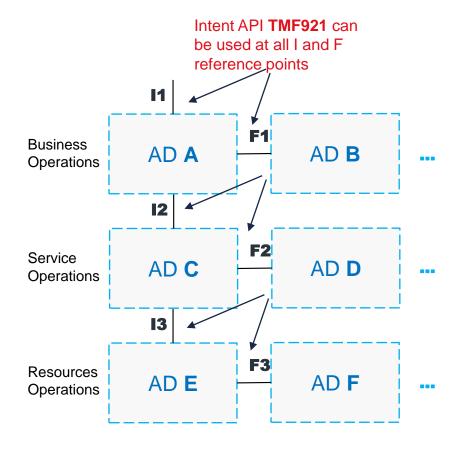


Autonomous Networks Reference Architecture (IG1251) AN Consumers Cross Domain Autonomy (External Ecosystem - B2B, B2C, etc.) 11 Knowledge and **Business Operations** F1 Intelligence K1 **Business Operations** Digital Storefront Intelligence Local Intelligence Portals Other Application √ 5. Cross Domain Collaboration 12 Catalog **Service Operations** F2 K2 Service Operations Model Knowledge Deploy Planning Intelligence **Training** Base Local Intelligence Maintain Optimization 13 13 13 **Data Services** Domain Intelligence **K3** F3 F3 F3 Intent Knowledge Governance Knowledge Optimization Management Resource Resource Domain Domain Operations Intelligence Operations Intelligence Domain Control Loop Management Analysis Decision Awareness Execution √ 7. Support Mismatched AN Levels ICT Infrastructure 1..N Autonomous Domains (AD) Only ADs at resource layer shown for simplicity **Autonomous Domain Autonomous Domain Autonomous Domain** * SI: Site Intelligence A (Simplified) B (Simplified) C (Detailed)



A Single Intent Interface Specification used throughout RA

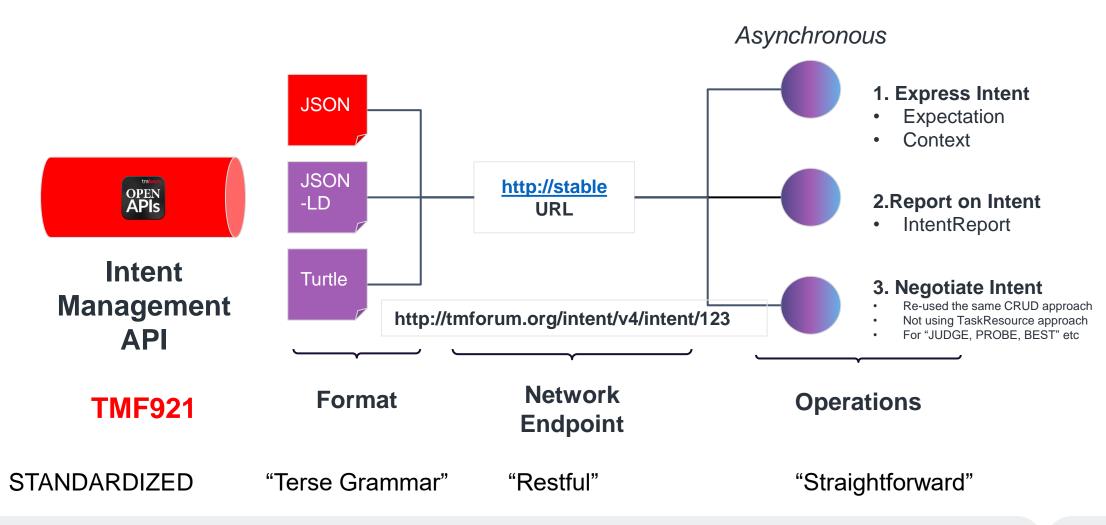




Intent API can be used at I and F Reference Points

AN Reference Architecture (IG1251)

TM Forum Intent API





tmforum