WP02
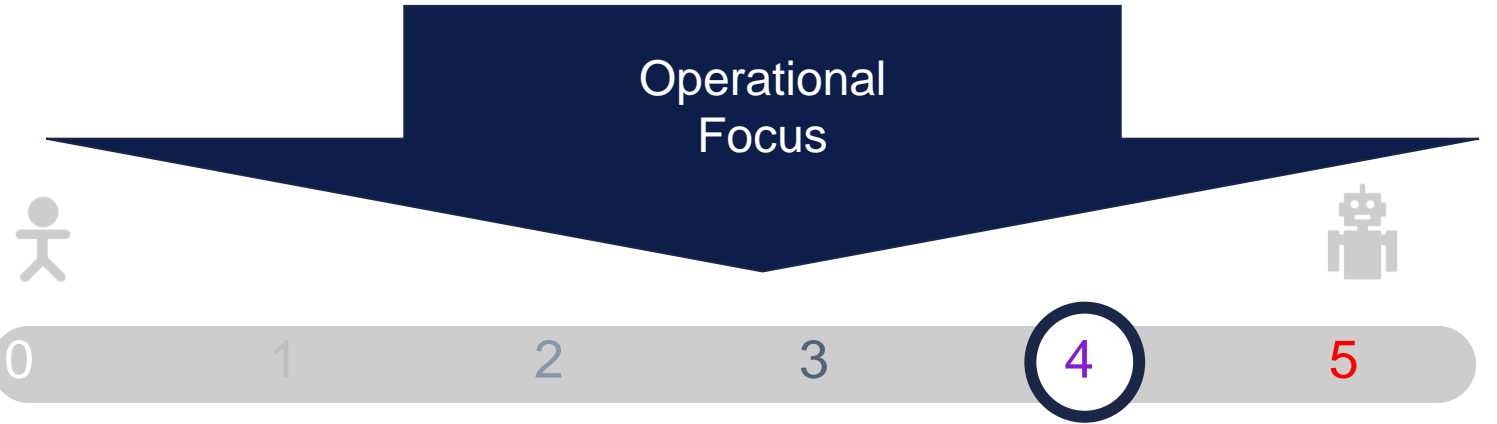# Operational Use Cases

The three challenges

1. Introduction of new Intelligent application to AN

2. Transition from current automation/ autonomous level to a higher level

3. Operational maintenance of a current Automation Level

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The 6 Levels of Autonomous Networks

'The HOW supervised'

Operational Focus

'The What'

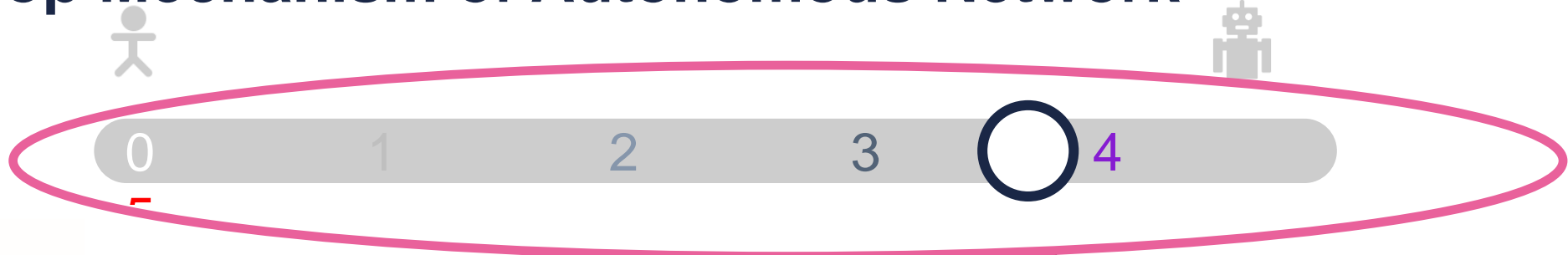| 0 | 1 | 2 | 3 | 4 | 5 |

'The HOW Implemented'

Implementation Focus

Level Definition	L0: Manual Operation & Maintenance	L1: Assisted Operation & Maintenance	L2: Partial Autonomous Network	L3: Conditional Autonomous Network	L4: High Autonomous Network	L5: Full Autonomous Network
Execution	P	P/S	S	S	S	S
Awareness	P	P	P/S	S	S	S
Analysis	P	P	P	P/S	S	S
Decision	P	P	P	P/S	S	S
Intent/Experience	P	P	P	P	P/S	S
Applicability	N/A	Select scenarios				All scenarios

P: Personnel, **S:** Systems

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Closed Loop Mechanism of Autonomous Network

0   1   2   3   ○ 4

Level Definition

Execution

Awareness

Analysis

Decision

Intent/Experience

Applicability

P: Personnel, **S:** Systems

Intent Owner

Intent owner inner loop

Intent
Expectations / Requirements

Experience
SLA compliance

Intent Management

Control Loop Management

| **Awareness** | → | **Analysis** | → | **Decision-making** | → | **Execution** |

Control Loop (AADE)
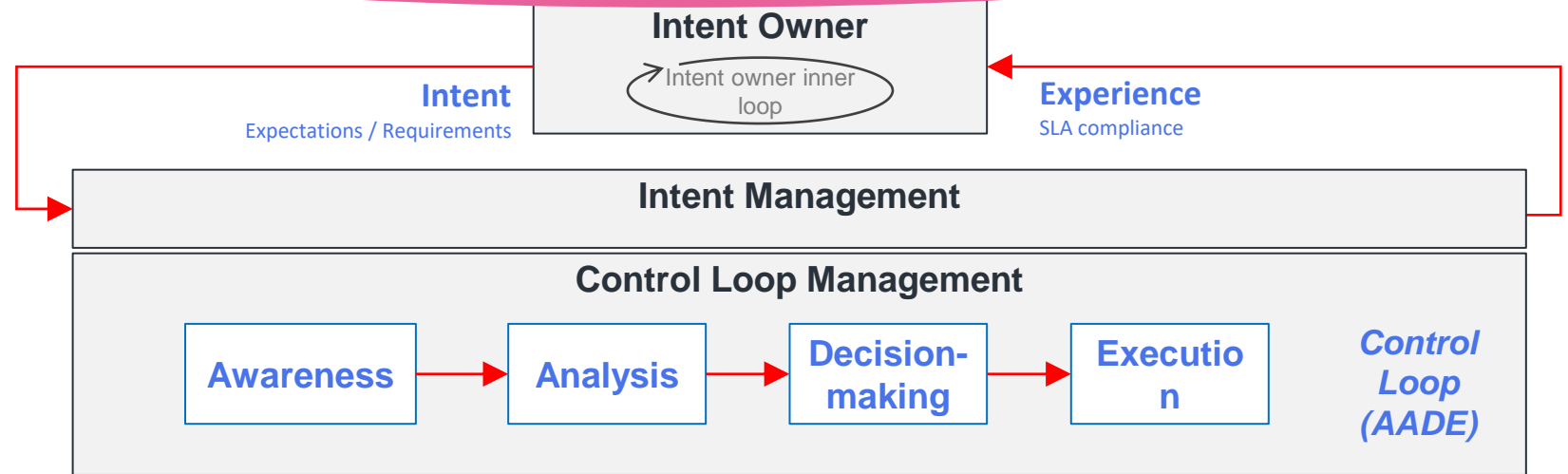
Alternate Implementation 'Models'

OODA

| **Observe** | **Orientate** | **Decision-making** | **Execution** |

MAPE

| **Monitor** | **Analysis** | **Plan** | **Execution** |

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Operational use case challenges

UC1

Onboarding AN

Integrating AN with OSS

UC2

Uplift AN Operational Levels

UC3

Maintaining AN Levels

- Next Slide

- Registering AN services
- ⇨Defining operational integration interaction patterns(& interfaces)
- ⇨ Defining Intents
- Operational processes for intent management
- Common operational principals
  - Some across all levels:
  - Intent based ownership, supervision analytics
  - Some level intent specific
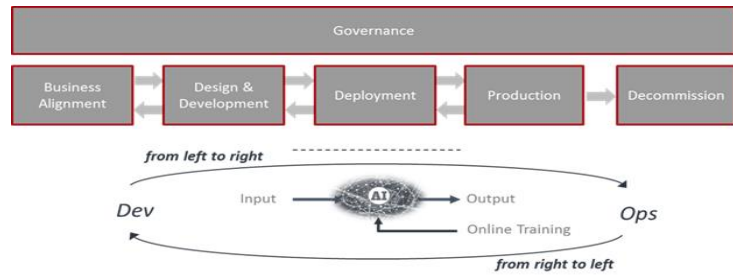- Deltas for change from one level to another

Level Definition	L0: Manual Operation & Maintenance	L1: Assisted Operation & Maintenance	L2: Partial Autonomous Network	L3: Conditional Autonomous Network	L4: High Autonomous Network	L5: Full Autonomous Network
Execution	P	P/S	S	S	S	S
Awareness	P	P	P/S	S	S	S
Analysis	P	P	P	P/S	S	S
Decision	P	P	P	P/S	S	S
Intent/Experience	P	P	P	P	P/S	S
Applicability	N/A		Select scenarios			All scenarios

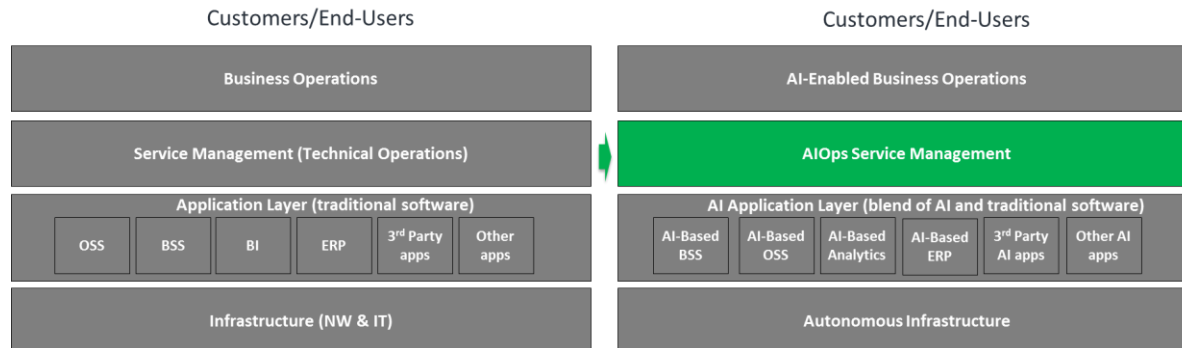tmforum

UC 3 Insights from AI operations

IG1190

General Software Lifecycle
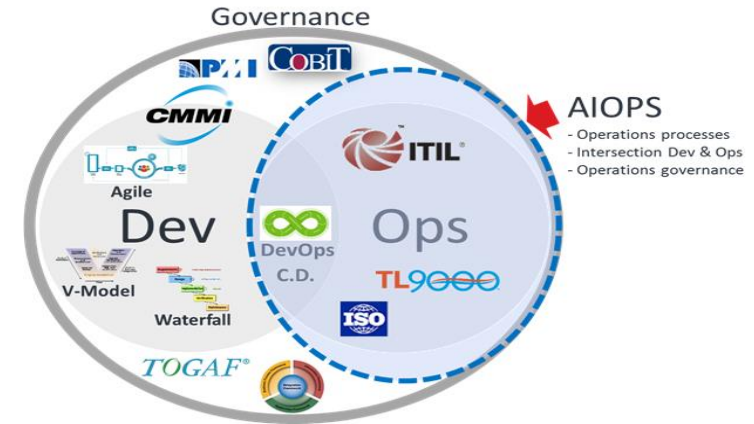
Scope of AI Ops

Scope of AI Ops

UC 3 Insights from AI operations

IG1190

Customers/End-Users

AI-Enabled Business Operations

Focus of our work →

AIOps Service Management

AIOps Service Management Processes

AIOps Service Management Tools

Application Layer (AI and traditional apps)

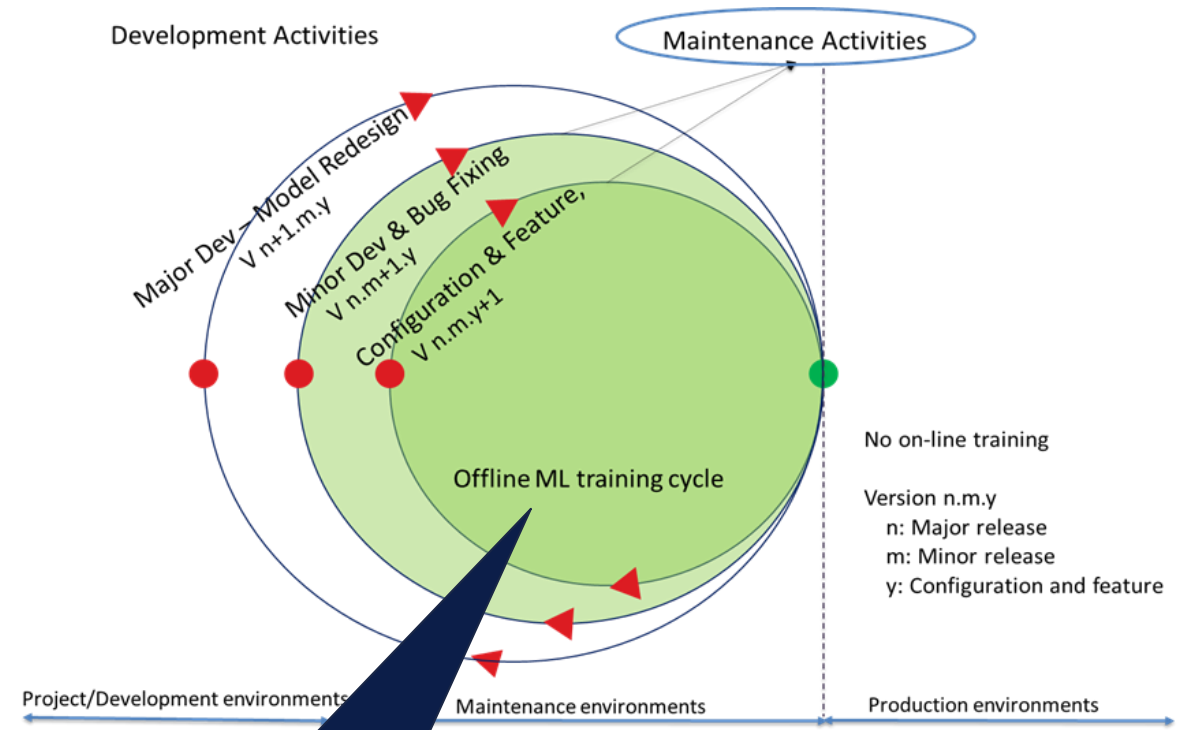| AI-based BSS | AI-based OSS | AI-based Data Analytics | AI-based ERP | 3rd Party AI Services | Other AI apps | ... |

Autonomous Infrastructure (NW & IT)

IG1190 App Maintenance
Three maintenance lifecycles

Development Activities

Maintenance Activities

Major Dev – Model Redesign
V n+1.m.y

Minor Dev & Bug Fixing
V n.m+1.y

Configuration & Feature,
V n.m.y+1

Offline ML training cycle

No on-line training

Version n.m.y
n: Major release
m: Minor release
y: Configuration and feature

Project/Development environments

Maintenance environments

Production environments

Unique to AI and ?AN

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Maintenance & Change/Version Management (example)

IG1190 App Maintenance