

**Network awareness and network intelligence
make the network better**

--Self-introduction of ITU-T Q7/13

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contents

- ◆ **Overview of Q7 scope**
- ◆ **Network awareness (NA)**
- ◆ **Network Intelligence (NI)**
- ◆ **Technologies based on NA and NI**
- ◆ **Q7 roadmap and future plan**

Current Research Area for Q7/SG13

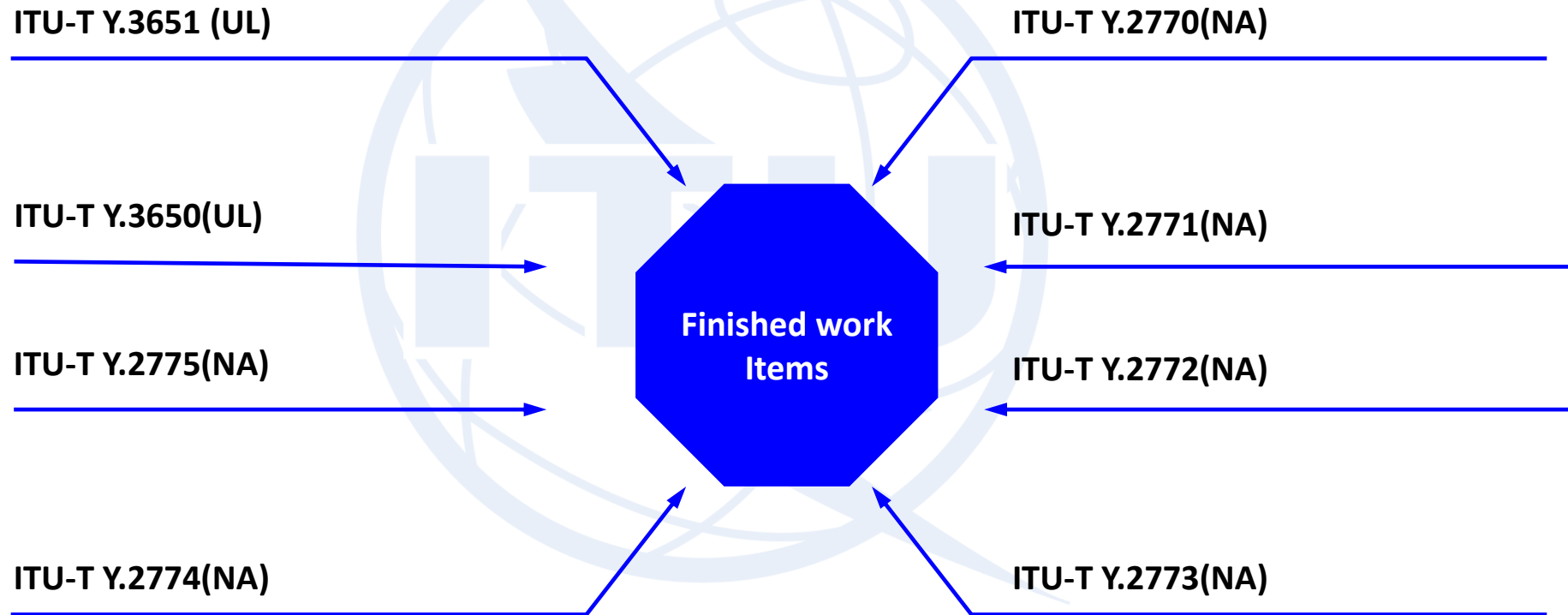
Aiming at upper layer technologies based on network awareness and network intelligence, studying big data driven networking, man-like networking etc.

Q7/SG13

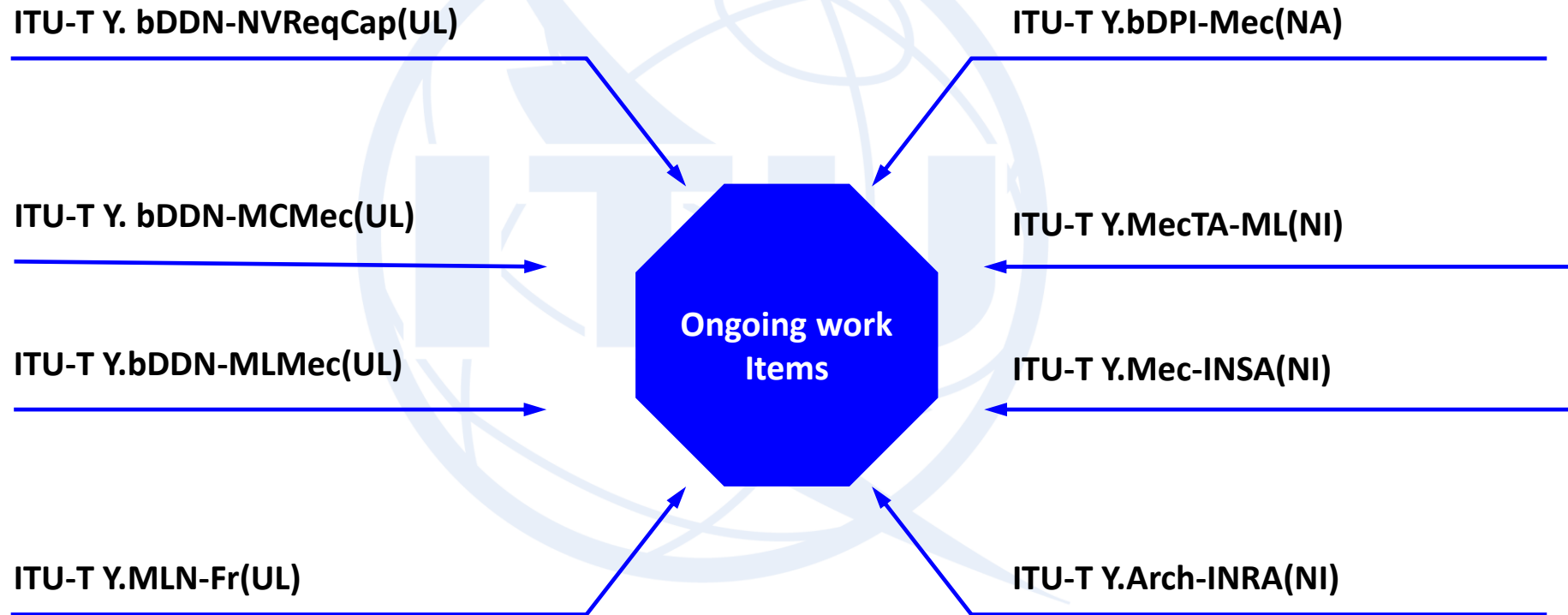
Aiming at future networks, studying standards for network service awareness, resource optimization, QOS/QOE improvement and upper-layer application supporting

Aiming at convergence between network awareness and machine learning, studying intelligent awareness technologies related to network status, network resource, network application and network requirements etc.

Published Recommendations



Ongoing work items

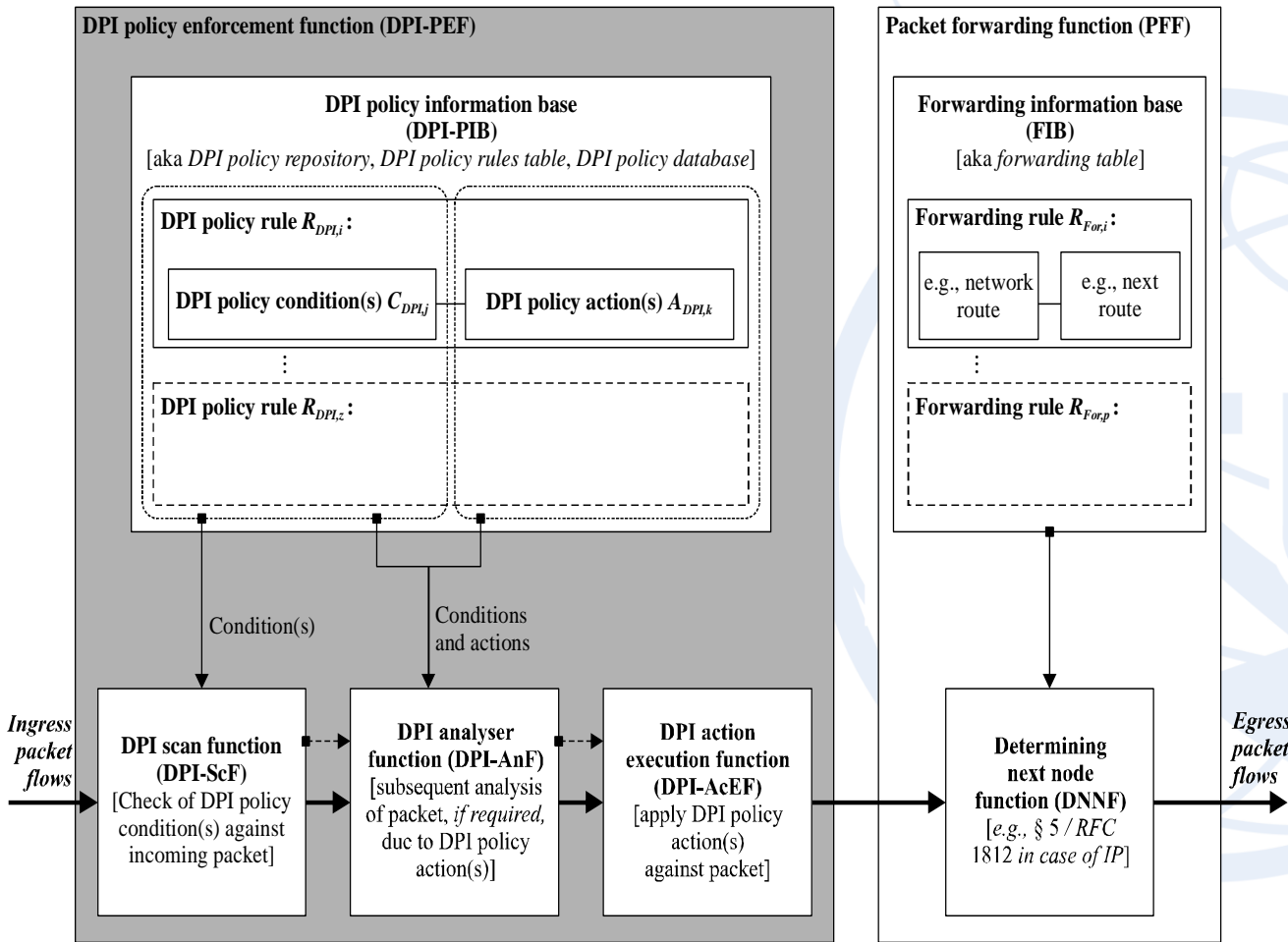


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Traditional Service awareness

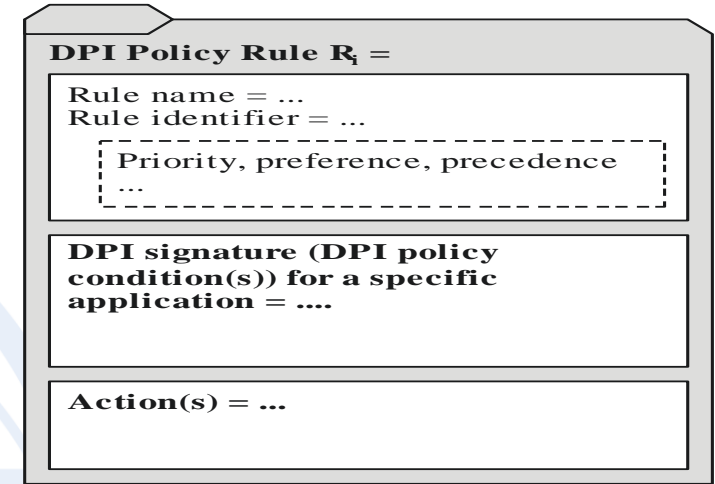
DPI Policy



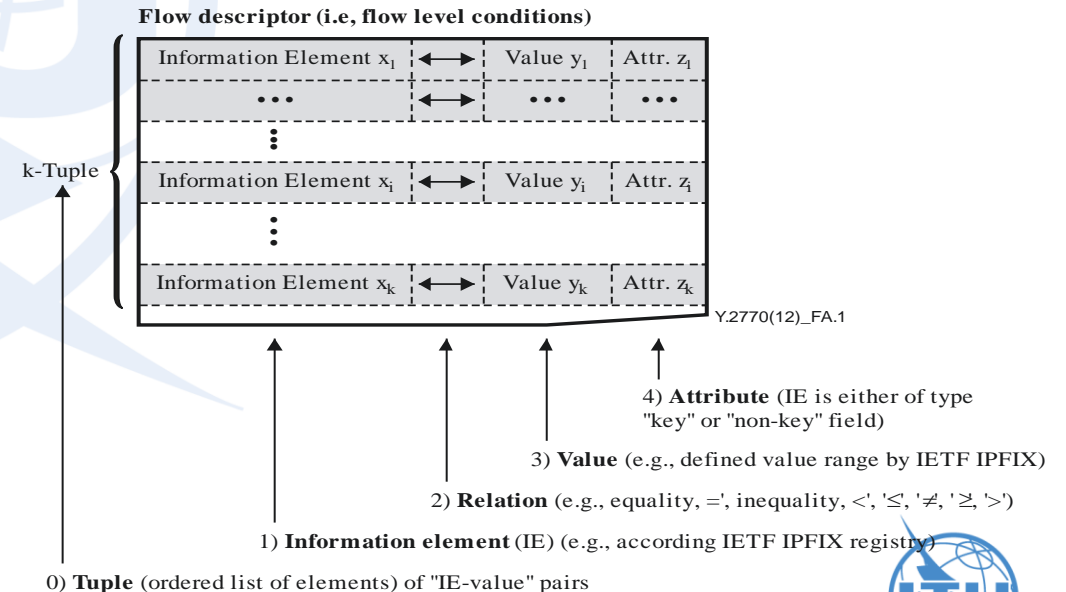
DPI Model

NOTE – The PFF is out of scope of this Recommendation.

Y.2771(14)_F7-5



Y.2770(12)_F1-2

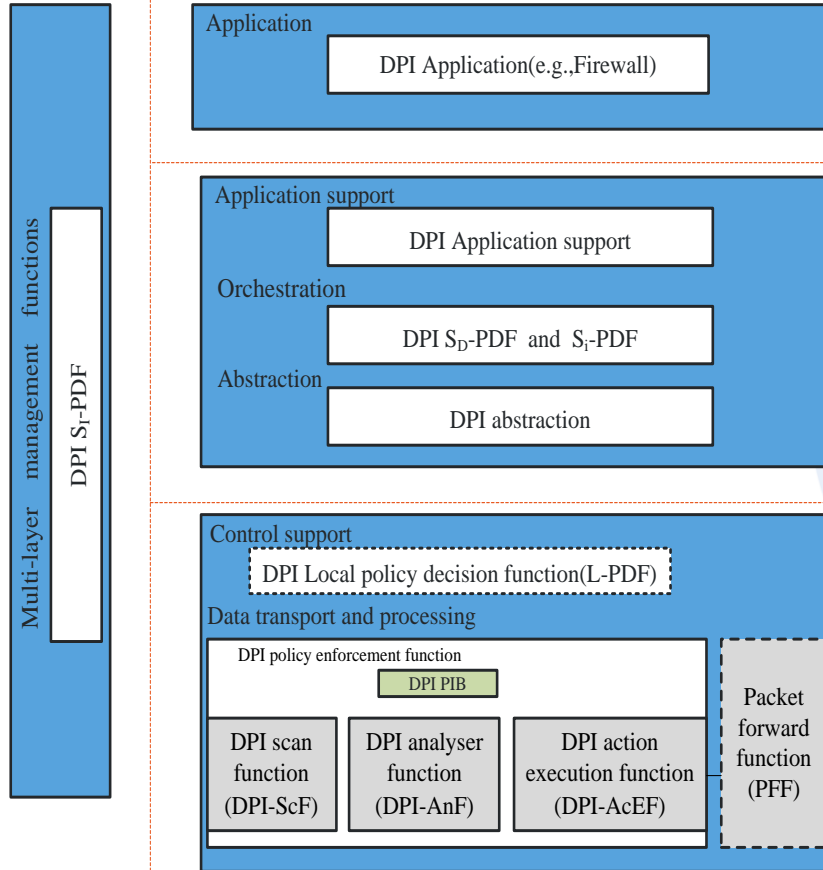


Y.2770(12)_FA.1

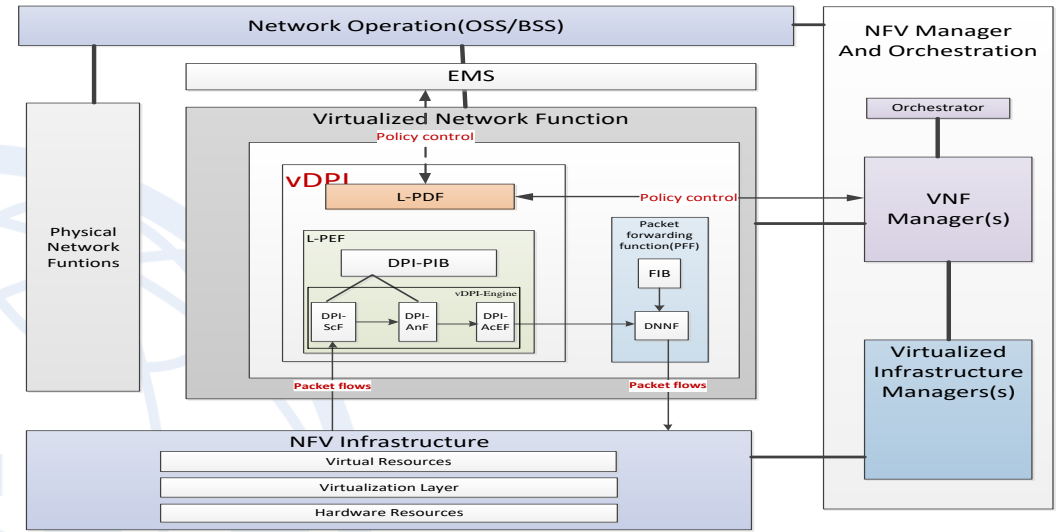
Flow description



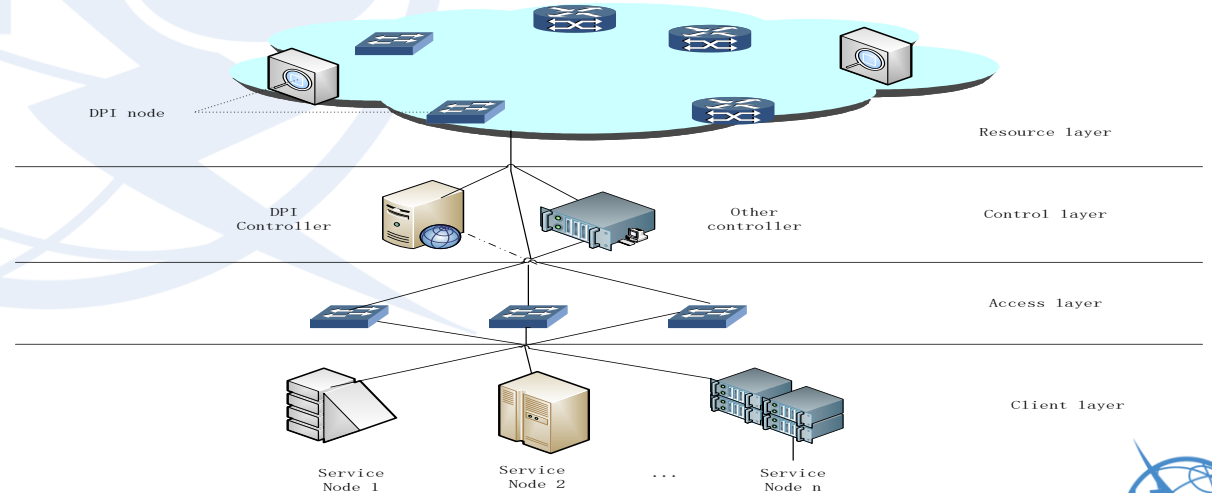
Network awareness for FN



SDN DPI



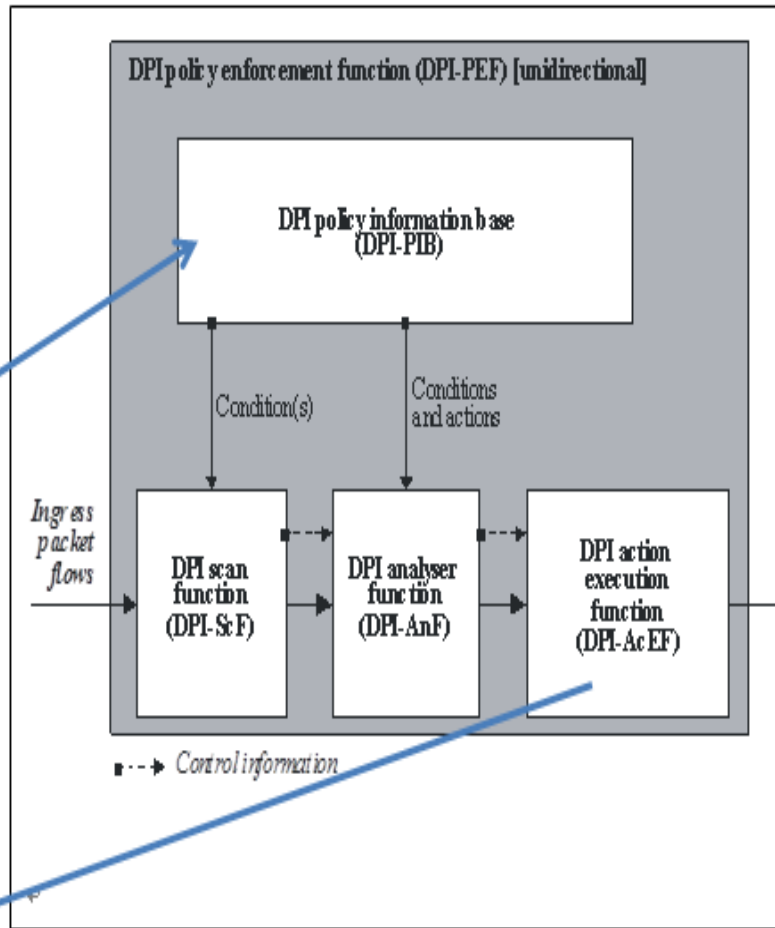
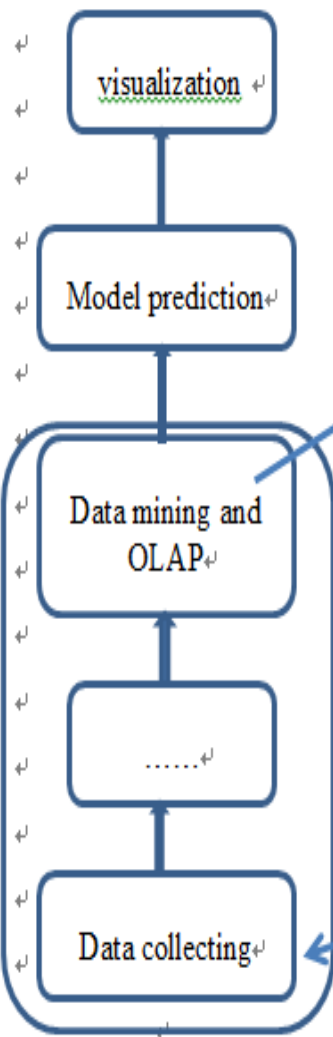
NFV DPI



Cloud DPI

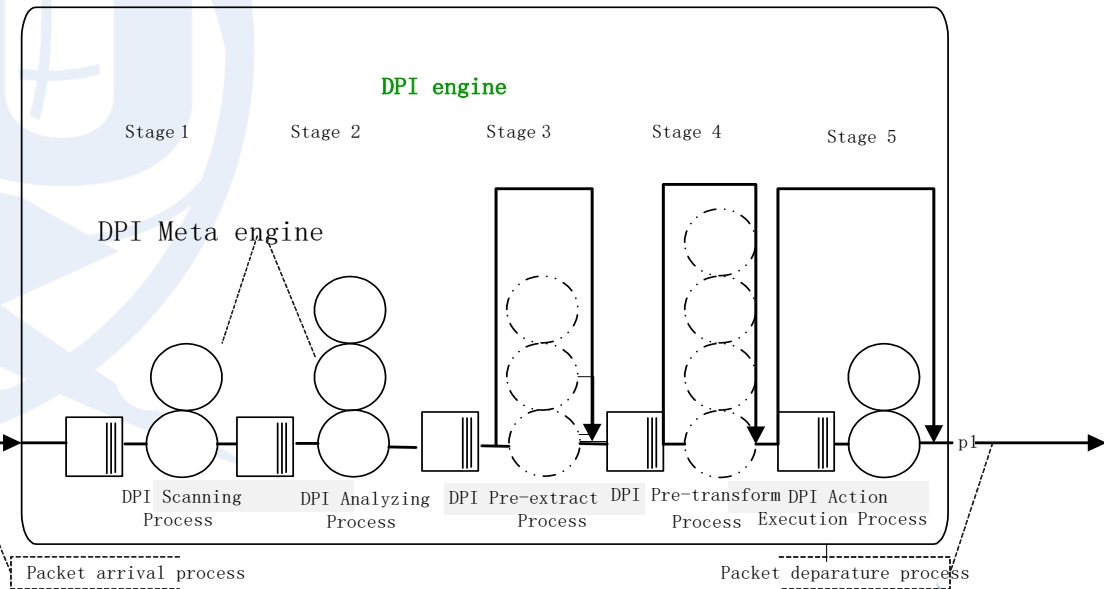
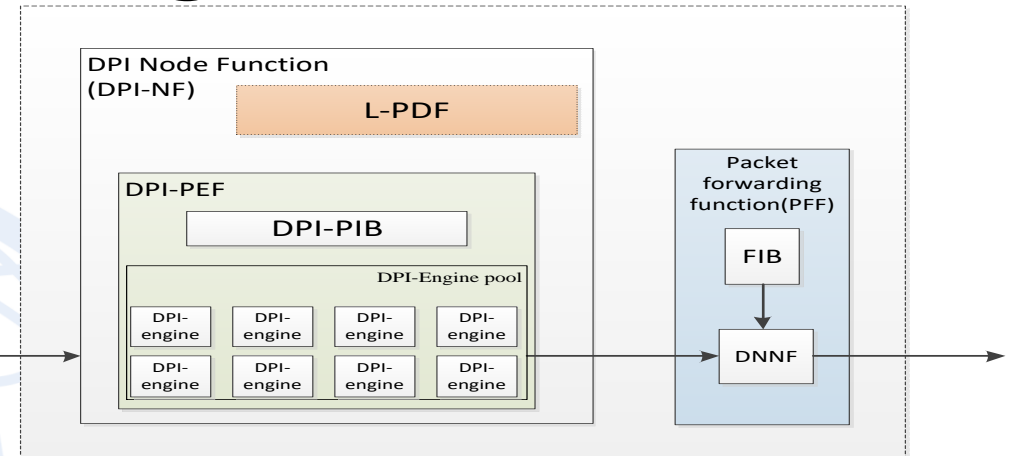


Network awareness for big data



DPI and Big Data

bDPI
Engine



DPI Meta Engine

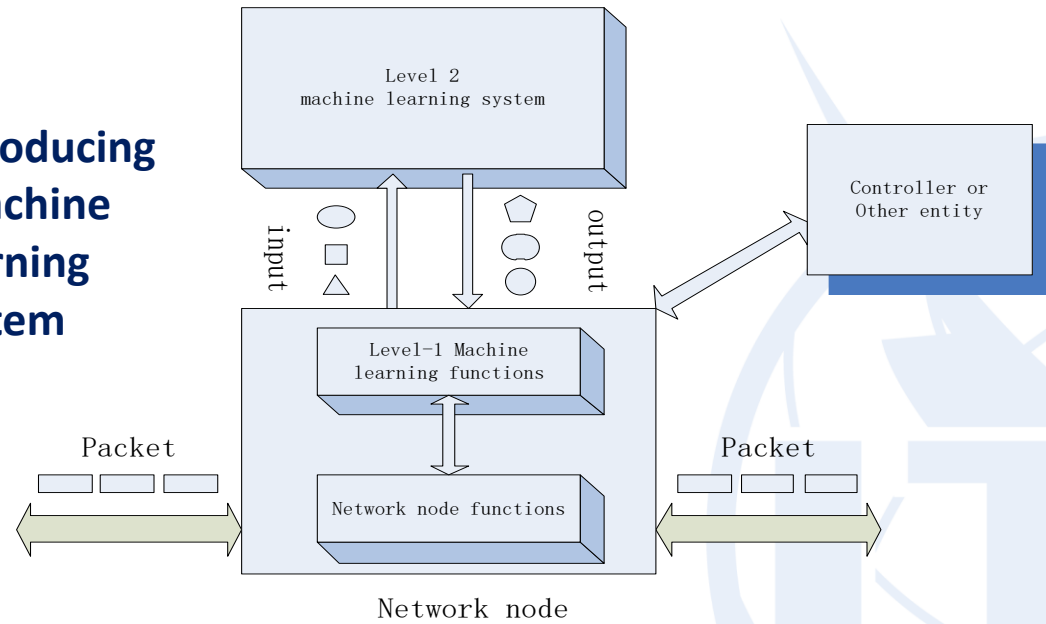


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Intelligent awareness for network traffic

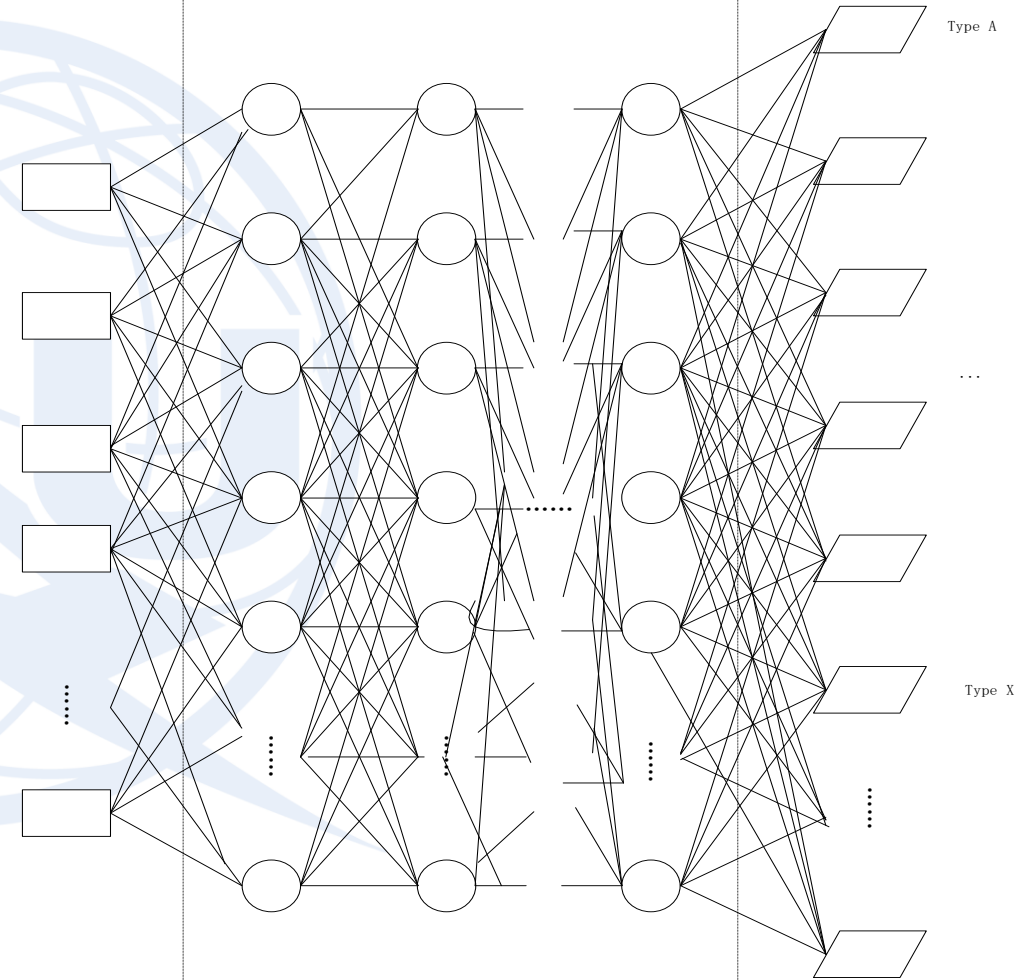
Introducing
Machine
learning
system



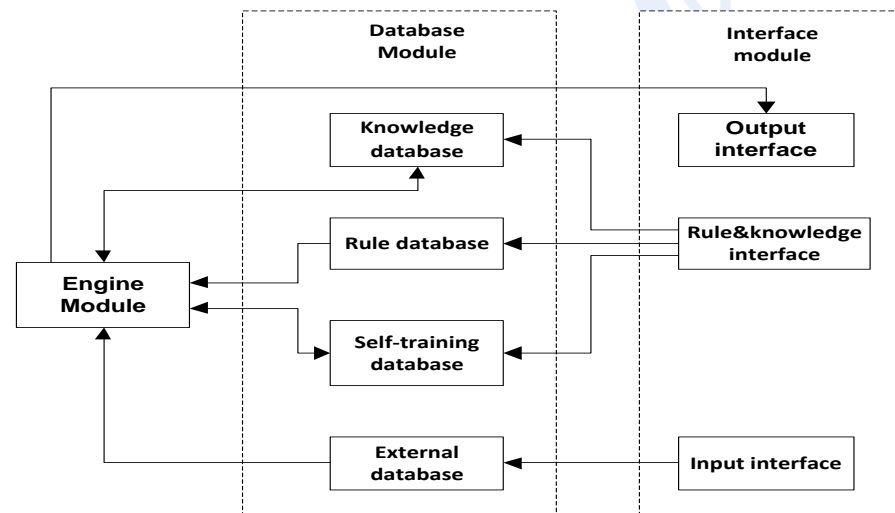
Traffic feature

Deep learning neural
network

Traffic awareness
result



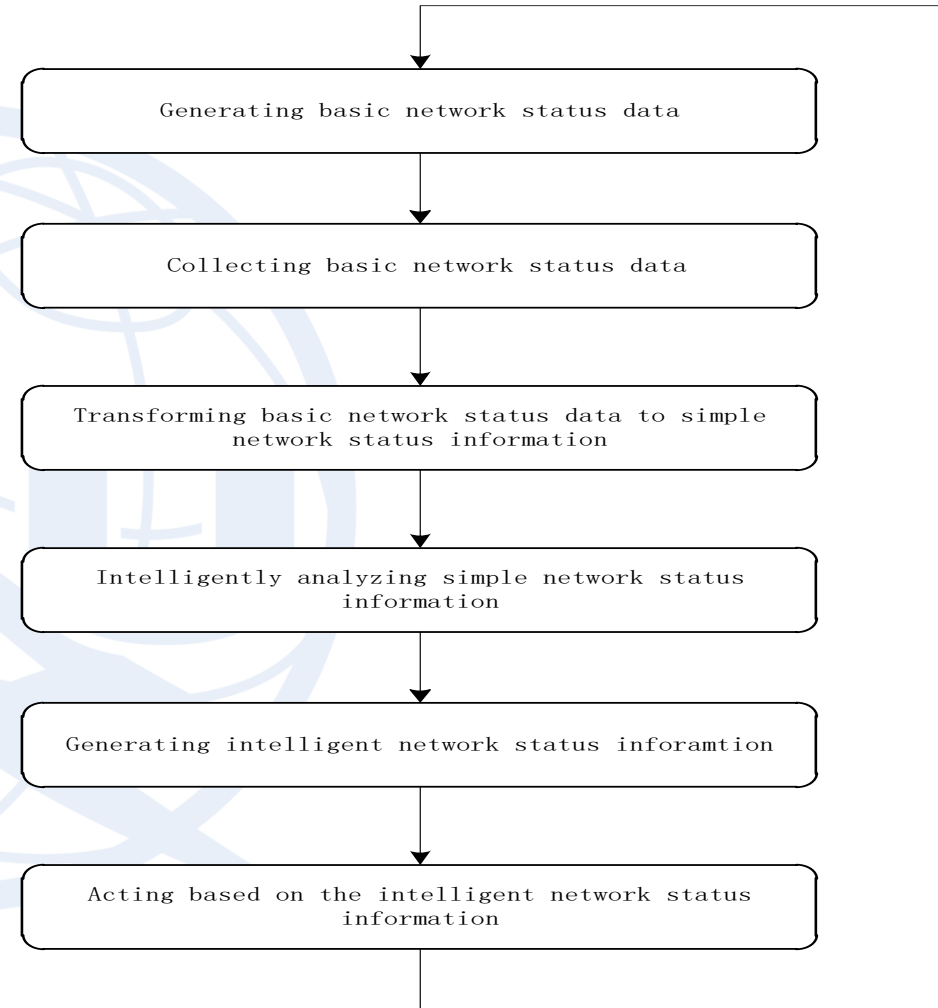
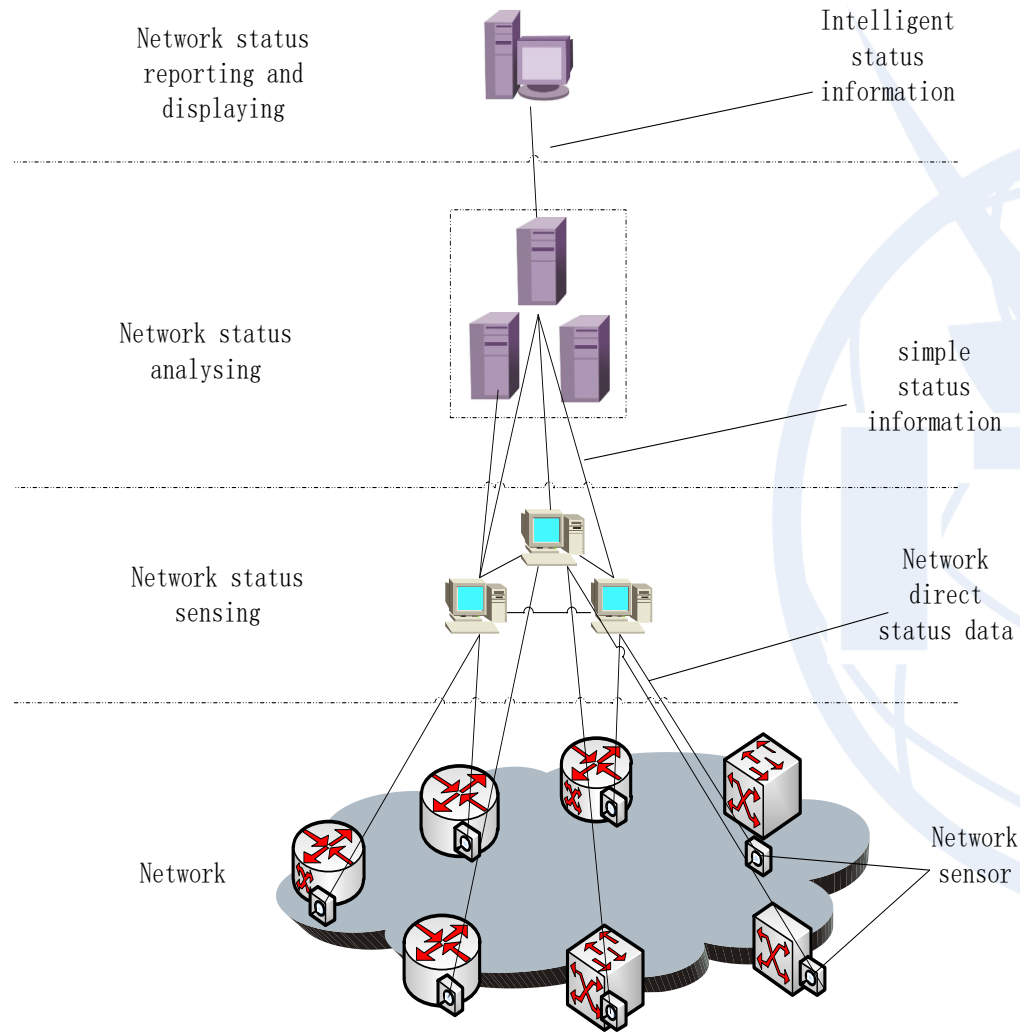
Knowledge
base



Machine learning method



Intelligent awareness for network status

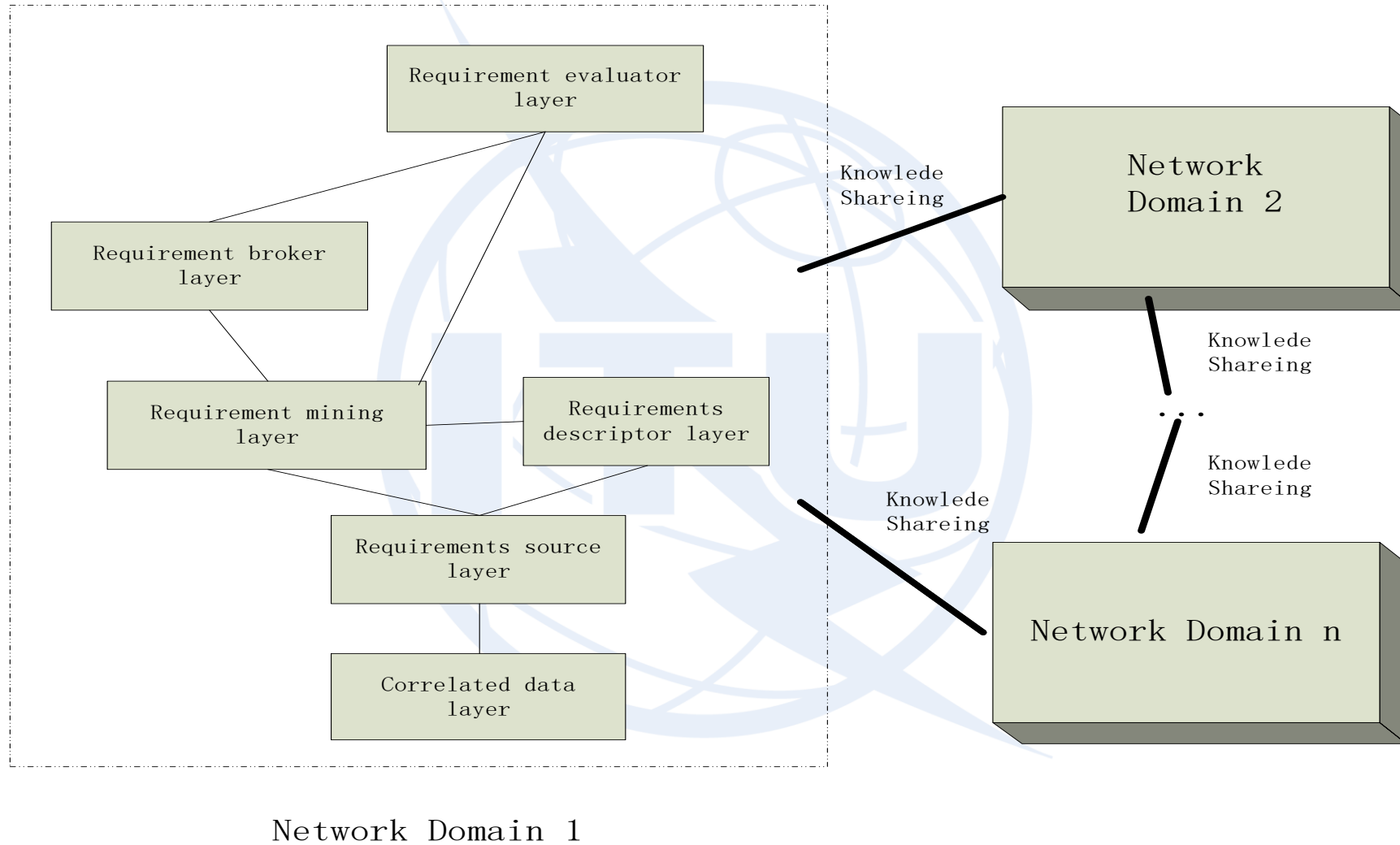


Network status intelligent awareness model

Network status intelligent awareness process



Intelligent awareness for network requirements

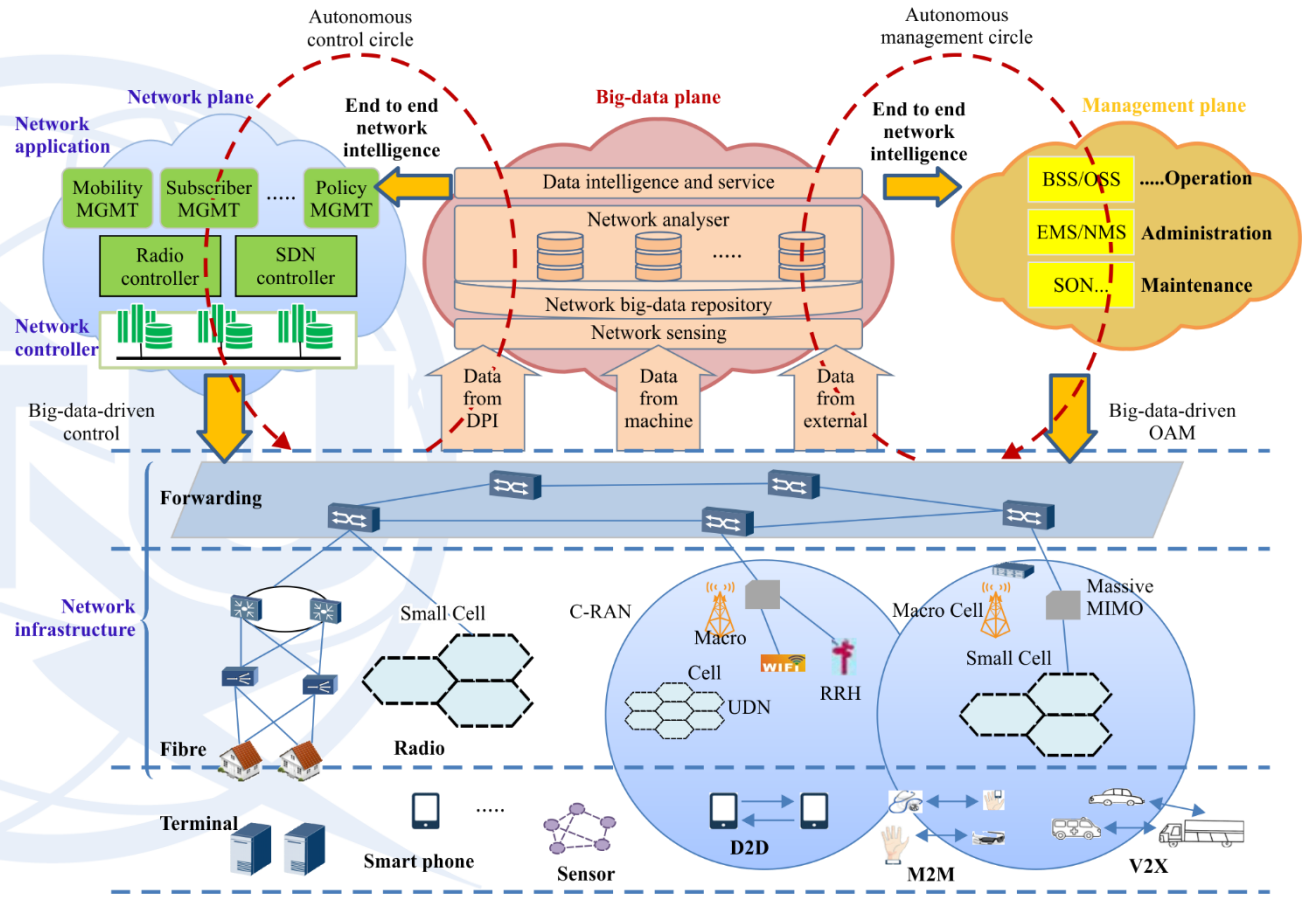
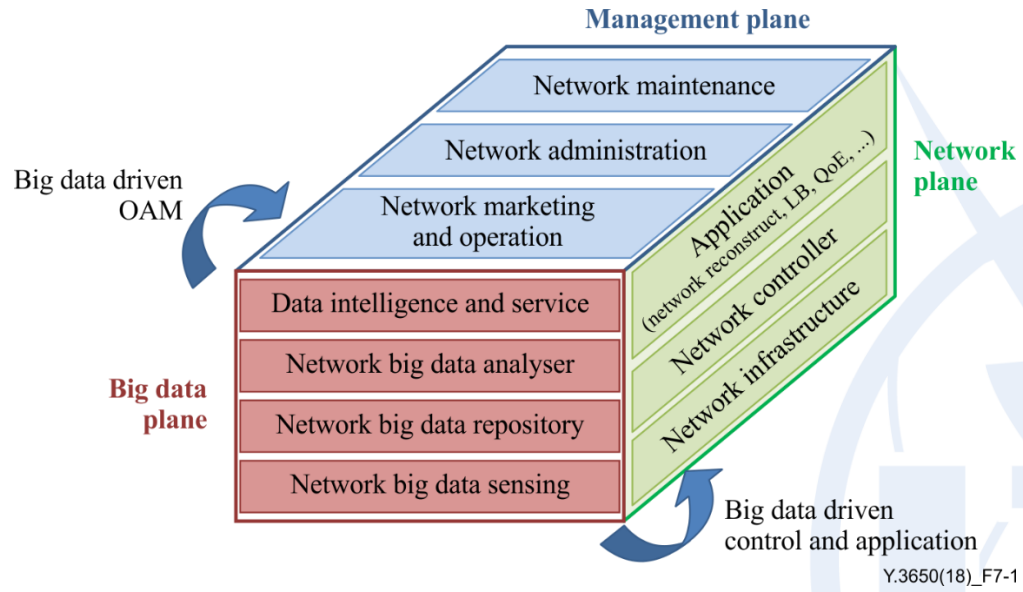


Model for network requirement intelligent awareness

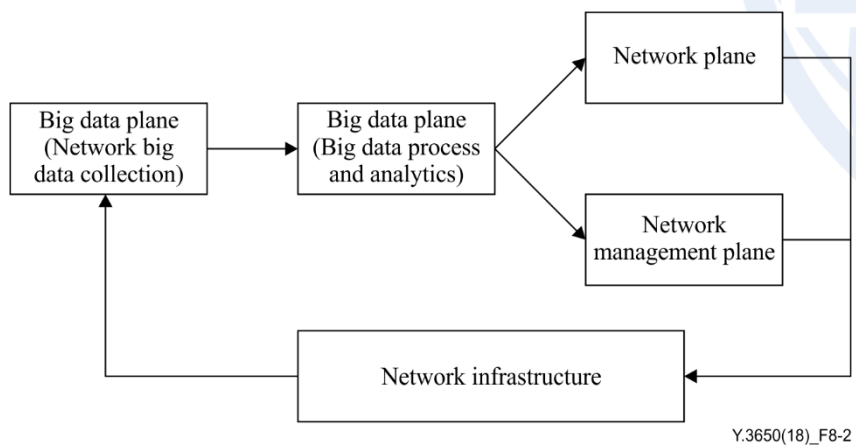
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bDDN



General model bDDN

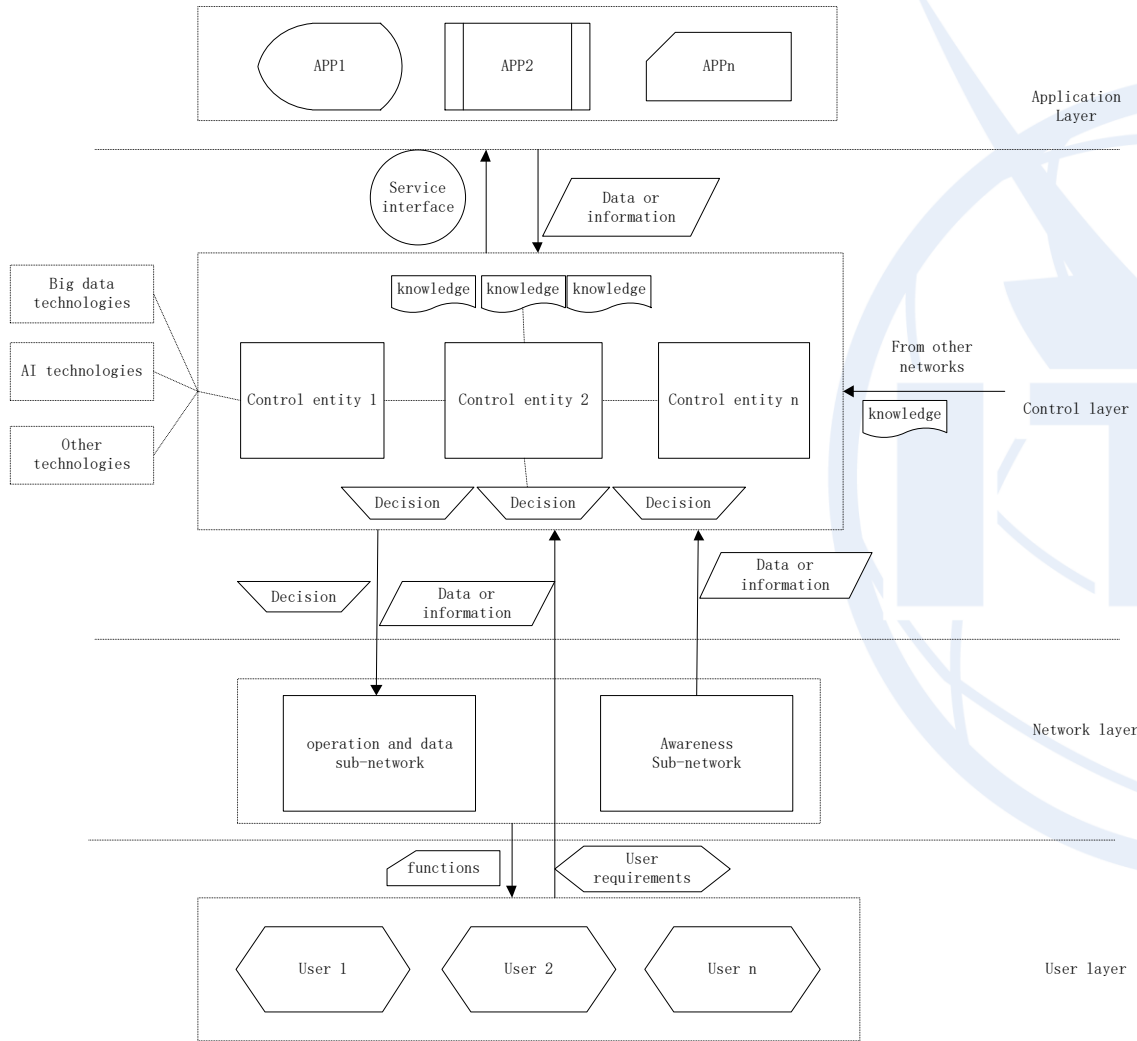


Relationship of bDDN planes

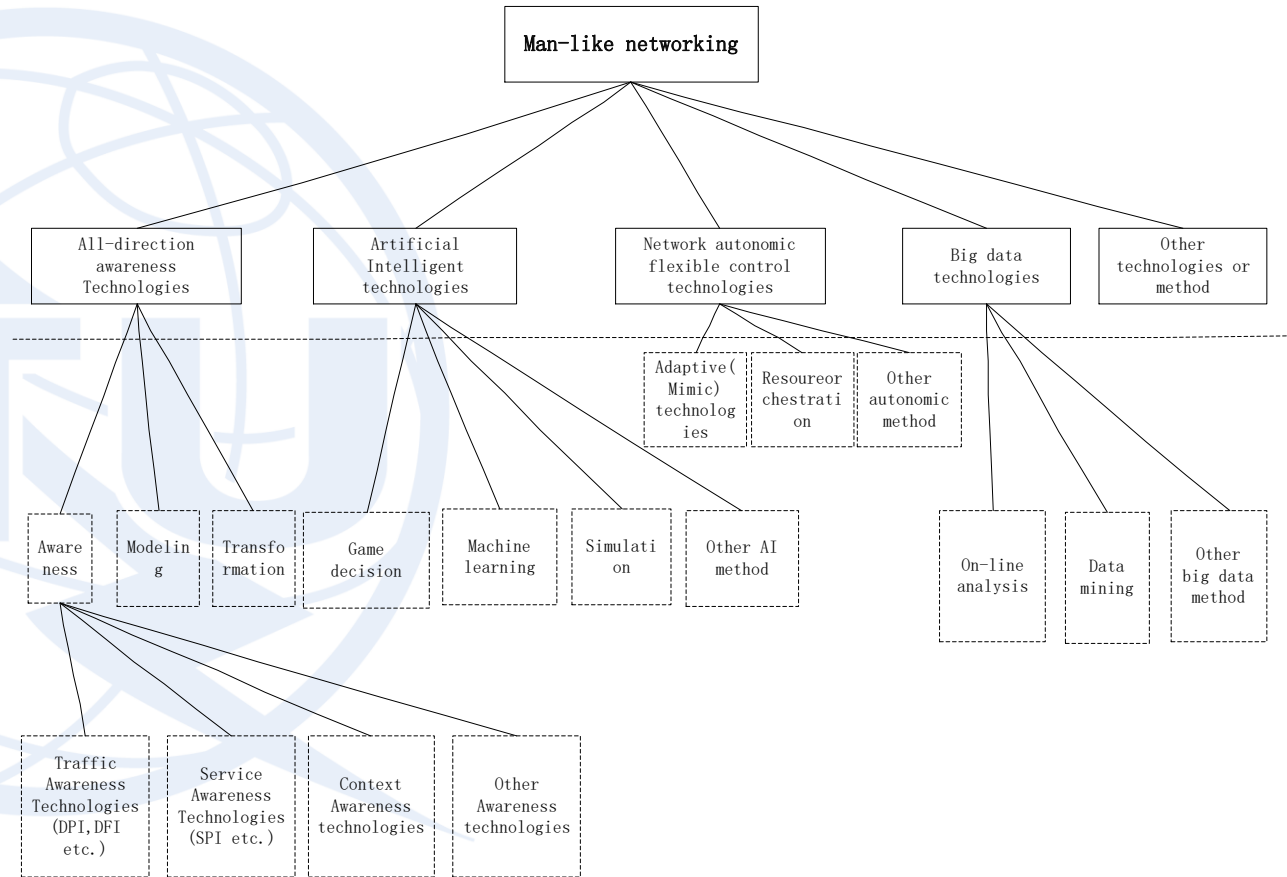
bDDN control loop



MLN



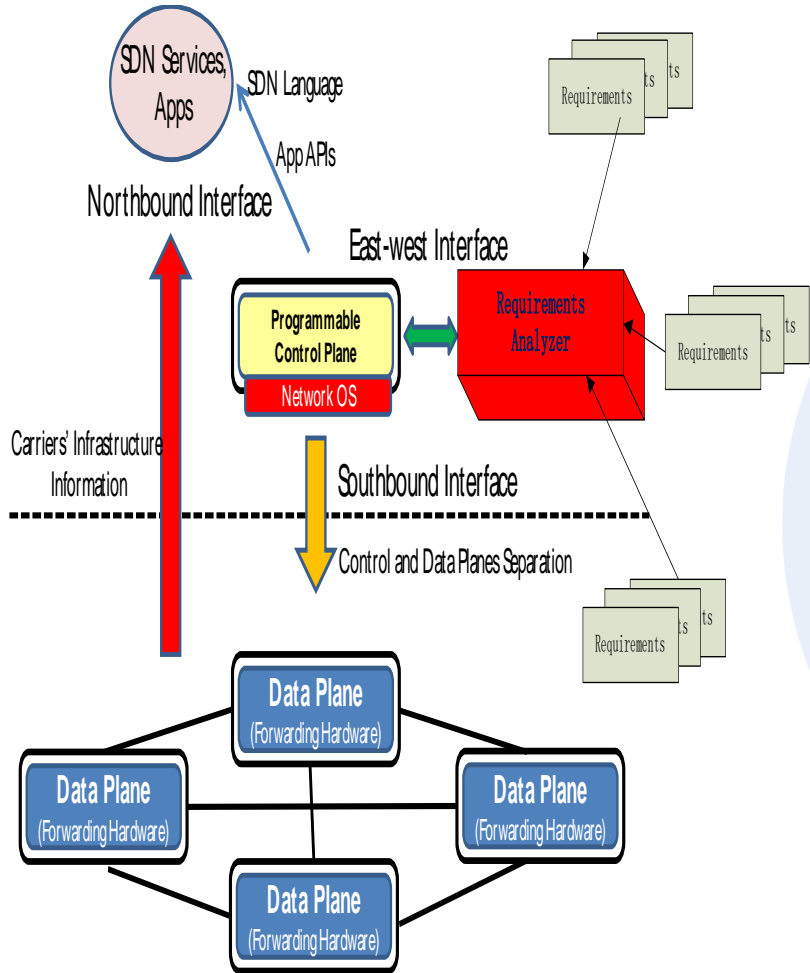
General framework for MLN



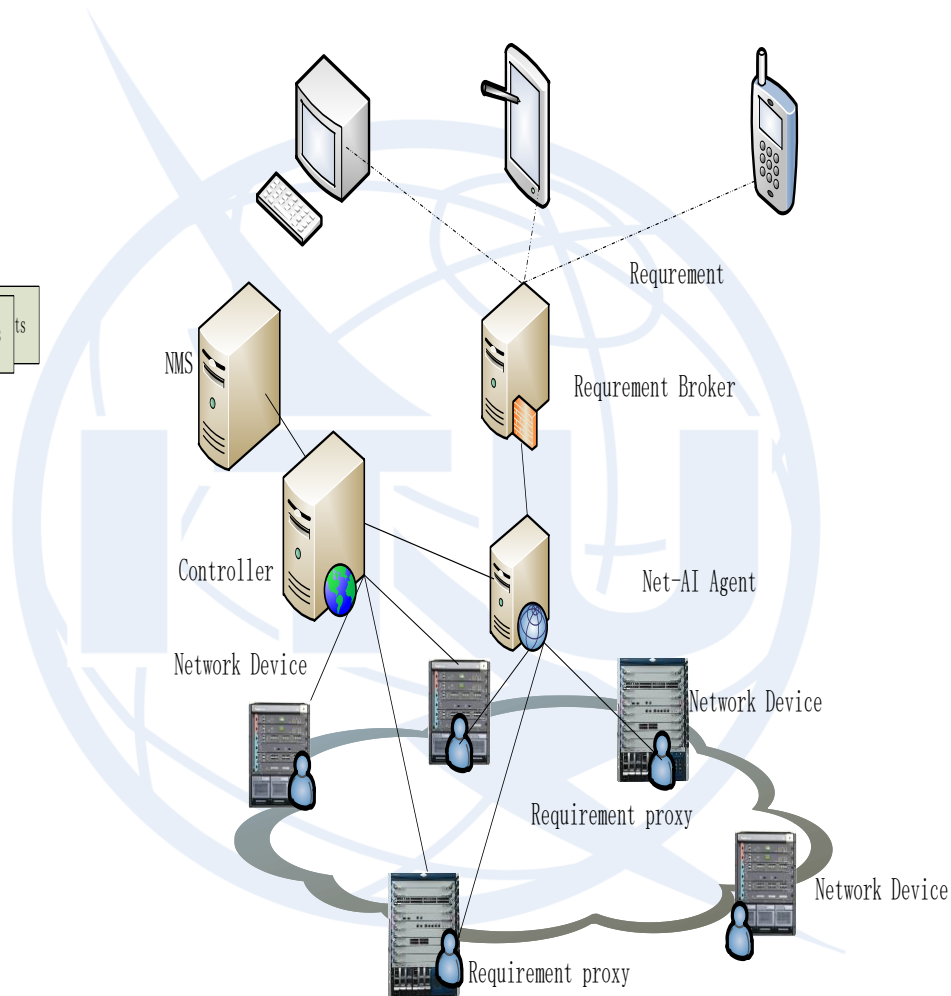
Technologies and methods used by MLN



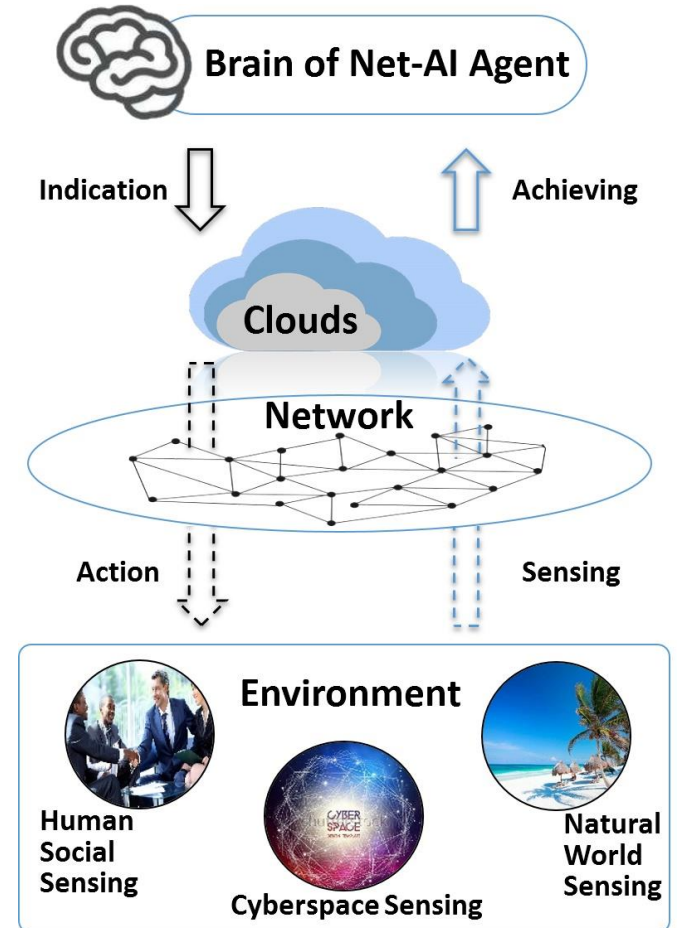
RDN



RDN logical architecture



RDN physical architecture



Net-AI-Agent



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Research Roadmap

Work item setup time or possible setup time

	Finished	Before 2019	2019	2020	2021	After 2021
Network awareness Area	Y. 2770					
	Y. 2771					
	Y. 2772	Y. bDPI-Mec			PIB control?	Cloud based?
	Y. 2773					
	Y. 2774					
	Y. 2775					
Network intelligence Area			Y. MecTA-ML	Y. Mec-INSAs		Network resource awareness?
				Y. Arch-INRA		
Up layer technologies based on NA and NI	Y. 3650		Y. bDDN-MCMec			Requirements defined networking ?
	Y. 3651		Y. bDDN-MLMec	Y. bDDN-NSMec	Y. bDDN-NVReaCap	
	Y. 3652		Y. MLN-Fr			



THANK YOU!

