

IEEE ComSoc

Network Intelligence

Emerging Technology Initiative

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Network Intelligence ETI

- New community and initiative focused on Network Intelligence
 - Pending approval by ComSoc ETC
- Not completely new:
 - Inherits from TCAC – Technical sub-Committee on Autonomic Communications

Mission

To support and endorse research in the domain of artificial intelligence for software networks and towards future networks.

The advent of the emerging networks, massively “softwarized”, require and are the opportunity to embed of the intelligence in the network.

Network intelligence will allow:

- Faster deployment (from months down to minutes)
- Continuous provisioning in line with the dynamic nature of network functions subject to up and down scaling
- End-to-end orchestration to ensure coherent deployment of IT and network infrastructures and service chains for example
- Ensure resiliency of networks and service availability

Topics

- Declarative policies (Intent) for orchestration and management
 - including Natural language processing for service deployment, change and assurance
- Learning techniques
 - supervised, unsupervised and reinforcement learning (forecasting, clustering and classification techniques) for resilient network
- Optimal resource allocation and placement and for network action recommendations
- Knowledge base
 - graph database and advanced data mining techniques to ensure coherency of emerging networks (SDN, NFV, cloud and 5G)
- Autonomic for software networks
- Self-configuration, self-optimization, self-healing and self-protection in programmable and software-defined networks
- Self-optimization for dynamic controllers and virtual network functions placement
- Policy-based management, including imperative, declarative (intent), and other paradigms
- Learning and reasoning techniques for programmable networks
- Data analytics and machine learning for autonomic management
- Autonomic based service lifecycle management and orchestration
- Autonomic resource allocation and configuration in virtualized infrastructures
- Adaptive scheduling in cloud computing environments
- Other topics as within the special track on autonomic management of IM2017

Officers

- **Chair** | Imen Grida Yahia
- **Vice Chair** | Mohamed Faten Zhani
- **Technical Program Chair** | Noura Limam
- **Standards Liaison** : Laurent Ciavaglia
- **Secretary** | Weverton Cordeiro

Participation

- Open to everyone willing to actively participate in the ETI activities
 - Interested? contact the chairs!

Some ongoing activities

- **1st International Workshop on Network Intelligence (NI)**
 - Co-located with ICIN conference, 19-22 February 2018, Paris
 - <https://www.icin-conference.org/NI2018/NI2018.php>
- **3rd International Workshop on Management of 5G Networks (5GMAN)**
 - Co-located with NMOS 2018 conference, 23-27 April 2018, Taipei
- **AI Net 2018 Conference**
 - Co-located with MPLS+SDN+NFV conference, 10-13 April 2018, Paris
 - <http://www.uppersideconferences.com/ainet/index.html>
- **Special track on Autonomic Network Management**
 - Co-located with IM and NOMS conferences
- **Standards areas where members contribute: IETF/IRTF, ETSI, IEEE...**
- **Future Special Issues in IEEE ComSoc journals and magazines**