

High-Calibre Software Experts Solving Your Network Puzzles

WE HELP YOU DELIVER YOUR PROJECTS ON TIME

WHO WE ARE

AMARTUS is a group of devoted and passionate IT professionals with solid background in Telecoms, networking software and Open Source initiatives.

Our vast experience covers design, development and customization of multi-vendor, standards-based CE 2.0, SDN, NFV and LSO solutions, and integration of complex, multi-layered service & network management systems into traditional and Cloud infrastructures.

Founded in Dublin, Ireland in 2003, we expanded with an R&D office in Kraków, Poland. With this proven model, we have continued to serve to customers with technology expertise.

WHAT WE DO

We support Network Equipment Vendors, Service Providers & Software Vendors with timely delivery of their sophisticated software projects through our innovation-led domain expertise.

We help our customers integrate complex, multi-vendor networks and customize advanced software solutions to deliver first to market new features & services, whilst in parallel attain interoperability to comply with the leading industry standards.

Our primary goal is to provide sterling expert support to elaborate ICT & networking projects.

OUR SERVICES



**SOFTWARE
SYSTEMS
INTEGRATION**



**SOLUTIONS
CUSTOMIZATION**



**EXPERT R&D
CONSULTING**



**SOFTWARE
QUALITY
ASSURANCE**



SOFTWARE SYSTEMS INTEGRATION

Project: MULTI-VENDOR INTEGRATION OF NETWORK EQUIPMENT WITH SERVICE PROVIDER'S MEF-COMPLIANT ORCHESTRATOR

GOAL: Integration of Tier 1 Service Provider's orchestrator with networking equipment by two independent suppliers. The aim was to enable the customer to manage a comprehensive range of MEF services on top of the existing multi-vendor infrastructure.

CLIENT: Two leading global networking equipment vendors for Tier 1 US Service Provider

AMARTUS' ROLE: MEF contribution (Spec refinement), expert consulting, requirements collection and definition, product development and customization, network engineering

SEE ALSO CASE STUDY 01

MEF CONTRIBUTION

Multi-vendor integration

Project: SDN TRANSPORT API (T-API) INTEGRATION WITH THE EXISTING SERVICE & NETWORK MANAGEMENT & ORCHESTRATION SYSTEM

GOAL: Supporting the customer's efforts of exposing Transport API (T-API) functionalities to a multi-layer service management & orchestration system using the RESTCONF protocol to achieve Lifecycle Service Orchestration (LSO) compliance.

CLIENT: Global networking equipment and solutions vendor

AMARTUS' ROLE: Requirements collection, LSO expert consulting, product development and customization, model mediation, network engineering

T-API

MEF LSO

Project: INTEGRATION OF MULTI-VENDOR CAPABILITIES WITH SDN/NFV ORCHESTRATION AND MANAGEMENT SYSTEM

GOAL: Providing the multi-vendor capabilities for L3 VPN full mesh and hub & spoke services in an SDN / NFV MANO platform. Support integration of heterogeneous devices to enable configuration (CLI, SNMP, and other) and enhance discovery, service catalogue design and REST interface.

CLIENT: Leading global networking equipment vendor

AMARTUS' ROLE: Expert consulting, systems architecture, product design & development, network engineering, project management, QA – manual testing and test automation, product documentation

SDN/NFV MANO

L3 VPNs



SOLUTIONS CUSTOMIZATION

Project: DEVELOPMENT AND CUSTOMIZATION TO SPECIFICATION OF L2/L3 SERVICE ORCHESTRATION PLATFORM OVER MULTI-VENDOR EMS

GOAL: Customizing a platform for E2E provisioning of services by different vendors (Cisco + Al-Lu). Implementation of L2 & L3 configuration features (Link Aggregation Control Protocol, VLAN, xConnect, VFI Pseudowire Switching, route-map, IP VRF, static route, route-target, BFD, BGP) .

CLIENT: Leading global networking equipment vendor

AMARTUS' ROLE: Software development, project management and cooperation with a multi-national client team, quality assurance - manual & automated testing (SOAP UI, Java), development of test automation framework, project support

Project: CUSTOMIZATION TO SPECIFICATION OF L2/L3 FEATURES FOR CARRIER ETHERNET, MPLS VPN AND MPLS TP SERVICE PROVISIONING

GOAL: The customized features include automatic generation of network device configurations (Cisco, Juniper, Al-Lu & Huawei), configuration & execution of networking tasks, configuration of BGP/MPLS VPNs, implementation of static routing, route policies, multicast, ACLs, QoS, DIA, and other.

CLIENT: Leading global networking equipment vendor

AMARTUS' ROLE: Expert consulting, design & development of new features, process automation, development of GUI extensions, project management in a multi-national team, quality assurance, network engineering

Project: CUSTOMIZATION OF BILLING ANALYSIS & PRESENTATION PLATFORM FOR A WORLD'S LARGEST BROADCASTING & CABLE TV COMPANY END USER

GOAL: Creating Spring Integration workflows, customizing the main client's platform to provide the necessary features as requested by the end customer, integration with third party endpoints, business logic implementation and end user bills generation in the requested output format.

CLIENT: Leading BSS technology vendor

AMARTUS' ROLE: Software projects setup, software development and maintenance, performance profiling, project support

Order Fulfilment

L2/L3 Configuration

BSS

Multi-vendor

MPLS VPN / TP

Billing

SOME PREVIOUS ENGAGEMENTS



EXPERT R & D CONSULTING

Project: YANG/RESTCONF MODEL-TO-MODEL MEDIATION CUSTOMIZATION TO ENSURE STANDARDS COMPLIANCE

GOAL: Developing an integration layer on to of customer system that allows for YANG/RESTCONF compliant exposure of customer data models.

CLIENT: Global networking equipment and solutions vendor

AMARTUS' ROLE: Requirements analysis, R&D, YANG modelling, model-to-model translation, software design, development and customization

SEE ALSO CASE STUDY 02

Project: MEF OPEN CS PACKET WAN ORCHESTRATION OF CE 2.0 SERVICES WITH SDN ODL CONTROLLER AND CE 2.0 NETWORKING DEVICES

GOAL: Delivery of a PoC solution realizing E2E CE 2.0 service provisioning combined with NFV chaining for a segment of multi-vendor network, integration of Open Source components to realize functional separation compliant with LSO architecture.

CLIENT: non-commercial (MEF)

AMARTUS' ROLE: Co-leading, definition and implementation of MEF OpenCS Packet WAN project, contribution to ODL project. Integration of Open Source components to realize the required MEF Legato, Presto and Adagio-related functionalities

SEE ALSO CASE STUDY 03



SOFTWARE QUALITY ASSURANCE

Project: QUALITY ASSURANCE OF NETWORK MANAGEMENT SYSTEM'S COMPLIANCE WITH MEF STANDARDS

GOAL: Comprehensive Quality Assurance of software compliance with MEF standards. Ensuring support for MEF services operations (CRUD). Requirements analysis & management for NMS support of MEF standards.

CLIENT: Global networking equipment and solutions vendor

AMARTUS' ROLE: Requirements collection, analysis and generation, test plan creation, test scenarios generation, setting up the testing lab, test leading and manual test execution, issue resolution, MEF expertise

Project: DESIGN AND DEVELOPMENT OF AN AUTOMATED TEST FRAMEWORK FOR MEF-COMPLIANT NETWORK MANAGEMENT SYSTEM

GOAL: Test framework design and development. Integration with the build scripts & continuous integration. Software development, life-cycle design & implementation. Automated tests of REST and SOAP web services. Backend verification (SoapUI).

CLIENT: Leading global networking equipment vendor

AMARTUS' ROLE: Testing environments setup and maintenance, test environment management (manual and automated), fixing issues, managing & leading the entire process of quality assurance in the project, MEF expertise

YANG/RESTCONF

MEF LSO

MEF Services

Test Automation Framework

Model mediation

PacketWAN

Comprehensive QA

REST & GUI

INDUSTRY COLLABORATION



OPEN NETWORKING
FOUNDATION



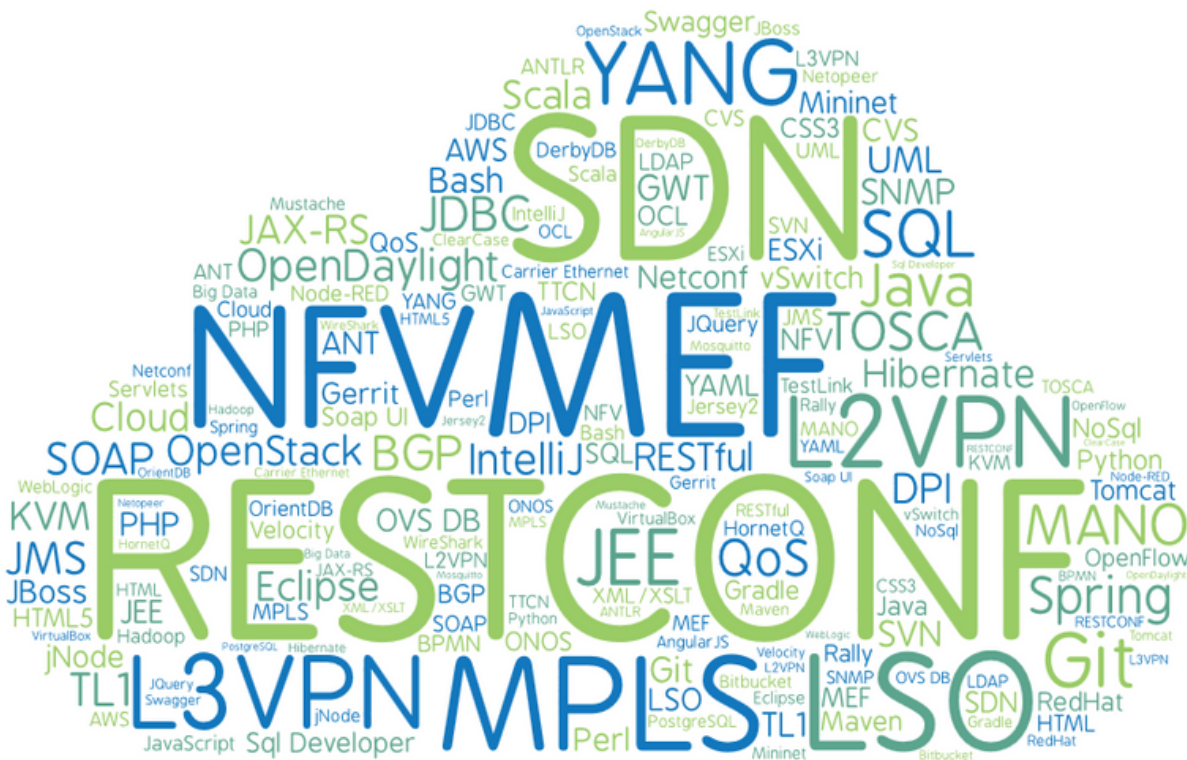
World Class Standards



COMPETENCE LANDSCAPE

Our customers seek diverse, high-quality expertise to foster Cloud & networking innovation and quickly resolve their integration issues. Industry know-how & expert knowledge provided by Amartus empower them to future-proof their solutions and capitalize on the latest technological advancements.

Our engineers combine premium software skills covering a vast competence landscape with quality Cloud, Telecom & Network experience, validated by a range of certificates from the leading standard bodies. [Contact us to learn how our expertise can boost your projects.](#)





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Amartus
TELCO **FLUENT** SOFTWARE **NATIVE**

About Amartus

Amartus provides tailored, expertise-led, high-quality software services to Network Equipment Vendors, Communications Service Providers and Independent Software Vendors. We have been actively involved in the Metro Ethernet Forum (MEF) activities, and we are currently co-leading one of the Lifecycle Service Orchestration (LSO) projects. Our industry collaboration also covers involvement in other leading standards groups, Open Source organizations, and industry ecosystems including Intel Network Builders, the European Telecommunications Standards Institute (ETSI), TMForum, and OpenDaylight.

Our vast experience in Telecoms & networking software covers the following areas:

- MEF standards & services
- Lifecycle Service Orchestration (LSO)
- Multi-vendor network integration
- Service MANO
- SDN / NFV applications
- YANG / RESTCONF integration
- TOSCA integration
- T-API applications
- OSS/BSS
- Multi-protocol L2/L3 network & device management
- Standards & protocols

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