

CIVICA

WanStaX

Unleash the power
of your network processors



Transforming the way you work

Civica WanStaX is a portfolio of licensable software components designed to allow the telecommunications industry to harness the full potential of your network processors.

WanStaX supports Next-Generation Broadband and Ethernet based services with migration to OpenFlow enabled devices. It provides extensive integration with Microsemi's WinPath and Sckipio's G.Fast chipsets, delivering a quality modular software solution for a diverse range of network applications.

Civica's market leading software, addresses challenges faced by network equipment manufacturers. The solutions are not only cost-effective but are also customisable and offer an accelerated route to market.



A high quality, off-the-shelf software solution provided as full source code.



Optimised to make complete use of the WinPath's powerful programmable pipeline.



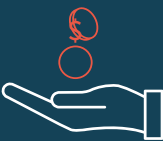
Accelerated development of networking applications including extensive G.Fast, L2/L3 and OpenFlow support.



Ready for management integration including CLI, SNMP and Netconf.



Agile and adaptable to new hardware designs.



Saving our customers \$8M+ against in-house development costs.

WanStaX meets the current and future needs of network equipment manufacturers and has been developed for the following products;

- ▶ Next-Generation FTTx with integrated Sckipio G.Fast support for off-the-shelf Distribution Point Unit (DPU) applications
- ▶ OpenFlow enabled CPE's, switches and routers
- ▶ Carrier Class Ethernet backhaul with Provider Bridge and Provider Backbone Bridge support and MPLS-TP including protection and OAM support
- ▶ Smart L3 Routers with IPv4/IPv6 including integrated ARP/NDP/Routing protocol support
- ▶ Smart L2 MEF compliant E-LINE/E-LAN/E-TREE services including extensive bandwidth and OAM support.

A trusted enabler of next generation networks

Over 15 years of market experience

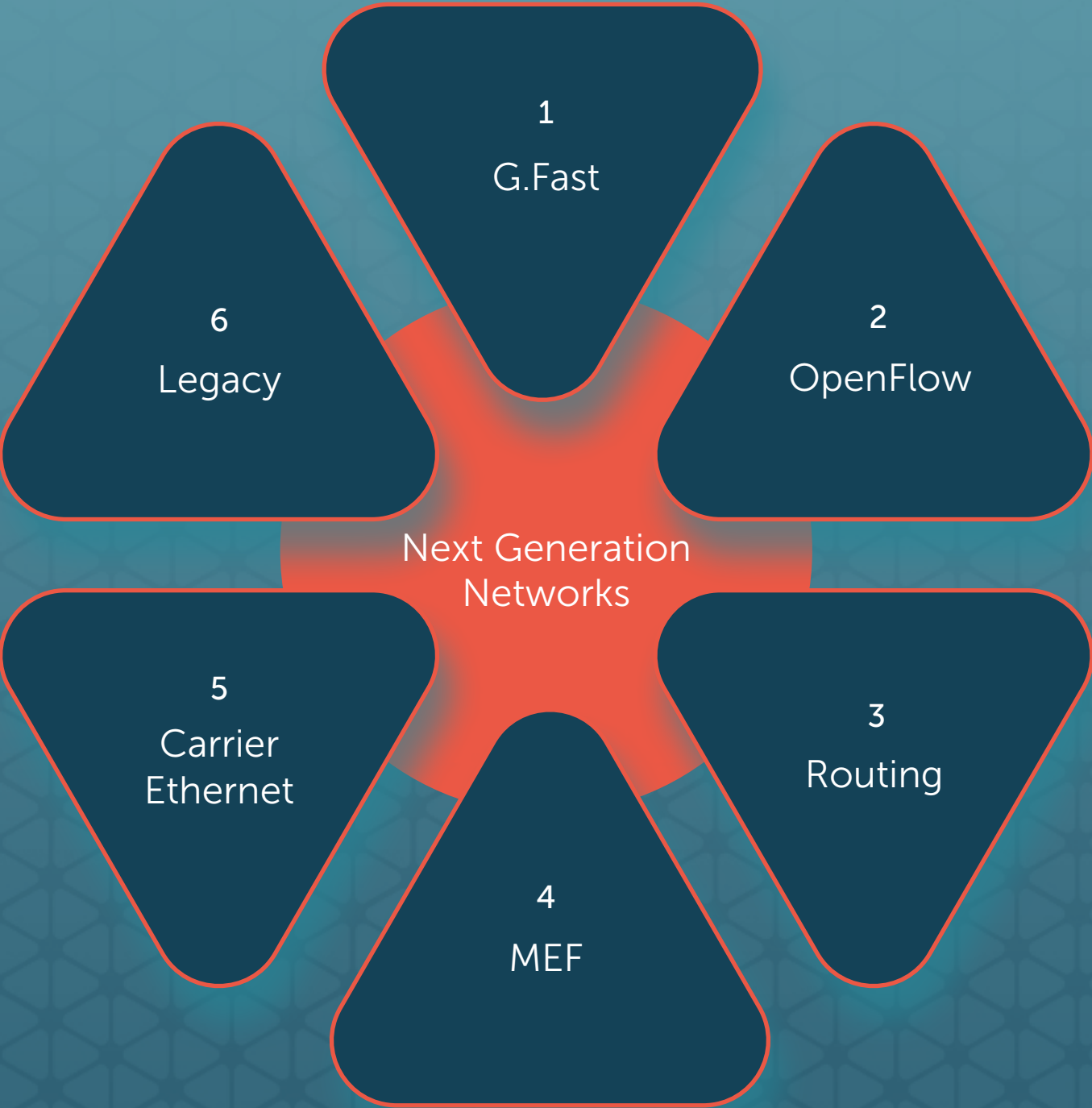
Our experienced team work closely with customers throughout the entire project lifecycle, from requirement validation and training, to integration support through to project completion. This collaborative approach results in a shorter development time and high customer satisfaction.

Tailored Services

Our expert services team also offer consultancy to customers who require a more tailored solution. With extensive experience in current and next generation telecoms solutions, Civica can assist with unique customisations to enhance product functionality or to suit any specific market need.

WanStaX technical capabilities

WanStaX has been successfully adopted within the following product areas:



WanStaX provides supports across many different telecom technologies, allowing a simple mix and match of features in line with customer specifications. It also enables a quick and seamless integration with Microsemi's WinPath and Sckipio's G.Fast chipsets.

1 G.Fast

- ▶ Delivers full integration of WinPath Network Processors and Sckipio's latest generation G.Fast DFE's, including EFM support.
- ▶ Provides all of the building blocks for a G.Fast DPU solution, including all of the core bridging, switching, routing, traffic management, OAM, Ethernet backhaul, Broadband Forum Netconf Yang management and CLI.

4 MEF

- ▶ Provides support for a full set of MEF 6.2 services, including E-LINE, E-LAN and E-TREE and 10.3 service attributes and features including MEF bandwidth traffic sharing.
- ▶ Supports a MEF UNI Type 2.2 providing E-LMI and Ethernet OAM, with integrated support for LAG 802.1ax, CFM 802.1ag, PM Y.1731 and LINK OAM 802.3ah.

2 OpenFlow

- ▶ Built-in support for OpenFlow protocol and pipeline creation with enhanced integration to the WinPath; delivering a large range of OpenFlow functionality including fast Ethernet OAM with sub-50ms protection switching support.
- ▶ Supports OF-Config Netconf Yang management with extensions and CLI.

5 Carrier Ethernet

- ▶ Significant VLAN bridging and switching capabilities, including advanced Provider Bridging, Provider Backbone bridging and MPLS-TP.
- ▶ Support for bandwidth traffic management requirements along with full Ethernet OAM, with integrated support for LAG 802.1ax, CFM 802.1ag, PM Y.1731 and LINK OAM 802.3ah.

3 Routing

- ▶ Creates and maintains multiple VRF IPv4/IPv6 routing instances with its own integrated ARP/NDP stacks for accelerated resolution of routes.
- ▶ It also provides integration for the popular Quagga/FRRouting based protocol stacks, enabling static and dynamic routing behaviours.

6 Legacy

- ▶ WinPath supports interworking of new and legacy TDM telecom technologies.
- ▶ WanStaX provides support for ATM, ATM-OAM, SDH/E1/T1/J1 TDM, CESoP, SAToP, IEEE 1588 PTP, allowing legacy support for existing and future applications.

Benefits of WanStaX

WanStaX delivers benefits for network equipment manufacturers, including;



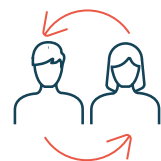
Accelerated time to market

With extensive support for Microsemi's WinPath driver API, customers can expect a functioning prototype within days. Everything from bootloader to full Linux OS support is provided. This accelerates bring-up of new product designs, resulting in production ready firmware within a very short development lifecycle.



Cost and resource effective

WanStaX enables in-house engineering teams to focus primarily on management integration as it provides all of the networking functionality for WinPath. This results in substantial cost and time savings for in-house networking application development.



Easy user adoption

WanStaX can successfully launch within a customer system with minimal knowledge of the product architecture, physical connections and configurations. The easy adaption of WanStaX to new hardware designs allows development to be maintained across multiple product lines under a single software tree. WanStaX is delivered with full system support, including build system, bootloader and Linux OS, minimising the need to integrate to a typical software development environment.



Next generation software

Products developed with WanStaX can benefit from integration without the need to OpenFlow. This allows future product variants to migrate to SDN without the need to overhaul the existing software solution. Seamless firmware updates allow existing and next-generation WinPath based designs to migrate to future networking advancements within SDN and OpenFlow.



Reusable and provided as full source code

WanStaX is provided as full C source code. It has a modular design that integrates seamlessly with the latest embedded Linux OS platforms via an OS abstraction layer, capable of running on the internal WinPath MIPS host or an external CPU. It can easily be adapted to include customer specific features and presents a clean hardware abstraction architecture. It also allows easy adaptations to new hardware designs within the same source tree.



Reliable and trusted software

WanStaX has been deployed globally and across multiple product lines to include G.Fast, Carrier Ethernet, MEF NID's, routers and OpenFlow. With its support for the full WinPath family, latest Skipio G.Fast chipsets, OpenFlow, MEF, Carrier Ethernet and Routing, customers have benefitted from faster product bring-up and faster time-to-market with minimal support required.

As part of the wider Civica group, we provide a wide range of business-critical software, digital solutions and managed services, making us a leading partner for customers. With more than 4000 employees, we are transforming services and improving lives for more than 500 customers. In the telecoms sector we have;

50+ years worth of software development

670K lines of code*

Used by customers across **3 continents** including North America, Europe and Asia

Represents a **saving of \$8M+** against in-house development cost

Used in **all Microsemi WinPath devices**, including WP3-SL, WP3 and WP4

Used in all generations in **Skipio G.Fast chipsets**

"Building our gateway solution using WanStaX was the right choice, not only to speed up development cycles and saving internal resources, but also to exploit WinPath's feature set to the full extent."

Product development manager for a European equipment manufacturer.

Unleash the power of your
network processors with WanStaX

To find out more or to book
a demonstration please
call **+44 28 9072 5000**

or

email **telecoms@civica.co.uk**



Cert No. 663
ISO 9001
ISO 14001
OHSAS 18001



civica.com/telecoms



linkedin.com/company/civica

© Copyright Civica Group Limited 2018. All rights reserved.