SUPPORTED PROCESSORS

Architecture	Processor	Boards	Qualification ECSS-B	XRE	LithOS	RTEMS	Linux
SPARCv8	LEON3 multicore	Frontgrade Gaisler GR712	Not planned	X	X		
SPARCv8	LEON4 multicore	Frontgrade Gaisler GR740	Q1 2024	X	X	X	
RISCV	NOEL-V multicore	Frontgrade Gaisler NOEL-XCKU	Q1 2024	X		X	
ARMv7	Cortex R4/5	Texas Instruments TMS570XX	✓	X		X	
ARMv7	Cortex R5	NanoXplore NG-Large	Not planned	X		X	
ARMv7	Cortex A9 multicore	Xilinx Zynq7000	✓	X	X	X	X
ARMv8	Cortex R52 multicore	NanoXplore NG-Ultra	Q1 2024	X	X	X	X*
ARMv7+v8	Cortex A53 + R5 Heterogeneus	Xilinx UltraScale+	Not planned	X	X**	X	X***
ARMv7+v8	Cortex A76 + R52	Renesas RCAR	Not planned	X			X

*   Linux MMU-less
**   Cortex R5 only
***   Cortex A53 only

ROADMAP

Architecture	Processor	Boards	Qualification ECSS-QB
SPARCv8	LEON5 multicore	Frontgrade Gaisler GR765	~ 2025
RISC-V	NOEL-V multicore	Frontgrade Gaisler GR765	~ 2025
RISC-V	CVA6		Not planned
ARMv7+v8	Cortex A72+R5 Heterogeneous	Xilinx VERSAL	~ 2025

SAFETY RUNS ON
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XTRATUM/NG

ECSS-QUALIFIED HYPERVISOR AIMED AT SAFE AND EFFICIENT EMBEDDED REAL-TIME SYSTEMS THROUGH VIRTUALIZATION

FEATURES

QUALIFICATION ECSS CATEGORY B
Qualification data pack available and custom-board qualification on demand

RESOURCE ALLOCATION
Spatial partitioning using hardware mechanisms for memory and devices protection

INTER-PARTITION COMMUNICATION
Through sampling and queuing including virtual interrupts

HEALTH MONITOR
Detects failures and implements mechanisms for fault containment

PARTITION AND SYSTEM MANAGEMENT
Support for system and non-system partitions

SCHEDULING
Temporal partitioning based on a cyclic scheduling policy, multiple plan available

APPLICATION CONTAINERIZATION
Partition isolation, resource virtualization, processor virtualization

TRACING SUPPORT
Relevant events are traced for debugging and monitoring

GUEST OS
Multiple guestOS availability and operative system adaptation on demand

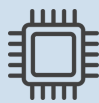**ARINC-653-LIKE FEATURES**

ADVANTAGES

- REDUCE SYSTEM INTEGRATION EFFORT
- EXECUTE CRITICAL & NON-CRITICAL SYSTEMS ISOLATED
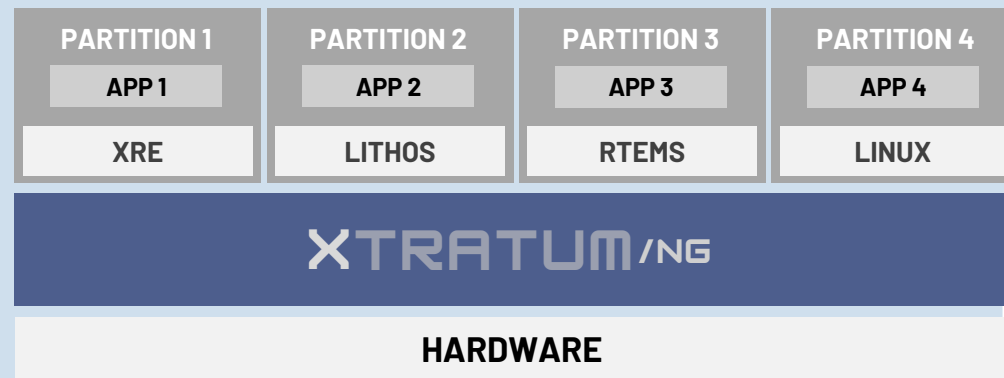- REDUCE QUALIFICATION TIME AND EFFORT
- MAXIMIZE YOUR MULTICORE UTILIZATION
- MULTIPLE OPERATING SYSTEMS RUNNING SAFELY IN THE SAME PLATFORM

SCHEME

PARTITION 1	PARTITION 2	PARTITION 3	PARTITION 4
APP 1	APP 2	APP 3	APP 4
XRE	LITHOS	RTEMS	LINUX

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HARDWARE

XTRATUM/NG ECOSYSTEM

Runtimes	XRE	Runtime for bare metal execution
Operating systems	LithOS	ARINC653-compliant real-time operating system
	RTEMS BSP	Free open-source Unix-like operating system support package
	Linux BSP	Free open-source real-time operating system support package
Development tools	SKE	Hypervisor system emulator on servers
	xtools	Tools to develop systems in a scriptable and user-friendly interface
Configuration tools	Xoncrete	Schedule analysis and generation tool
	XPM	Project manager based on eclipse
	xcparser	System configuration management tool