



life.augmented

STM32Cube and Azure RTOS Overview



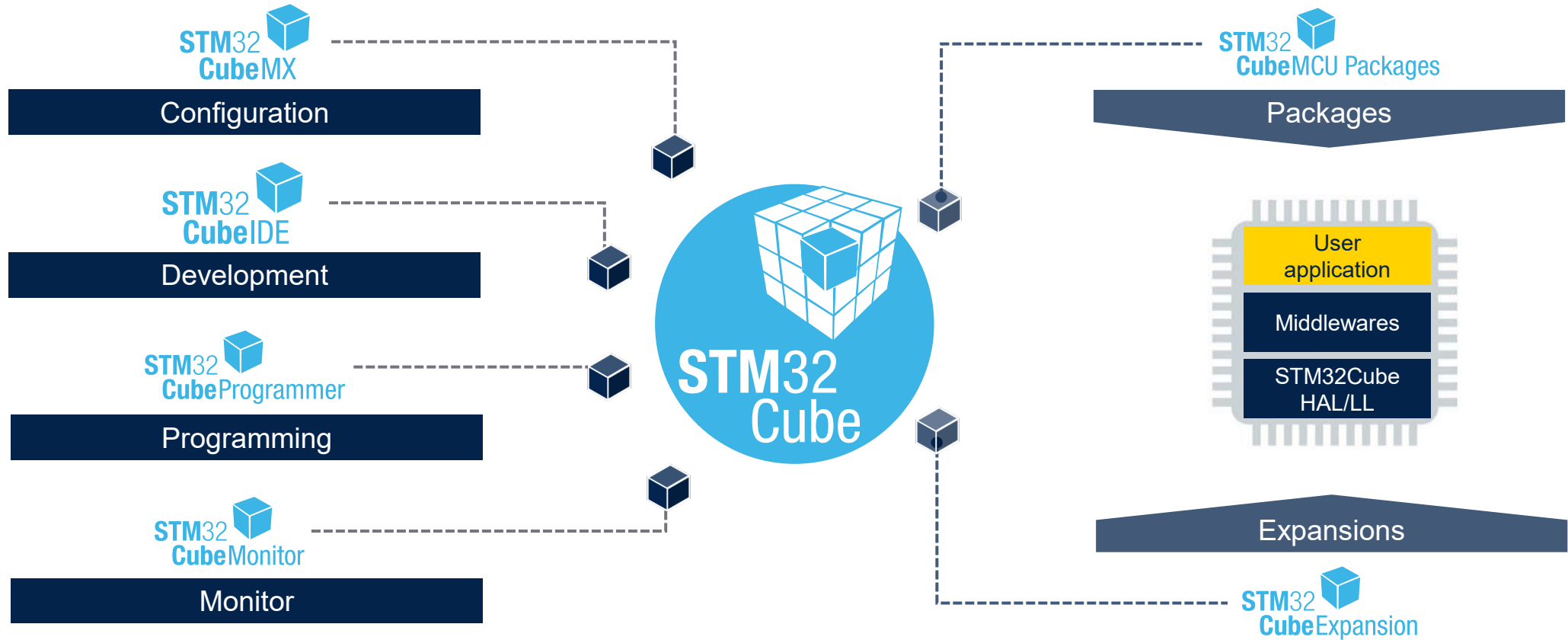


STM32Cube Software Suite Offer

Software Tools



Embedded Software





Ongoing - STM32Cube Software Suite (1/2)

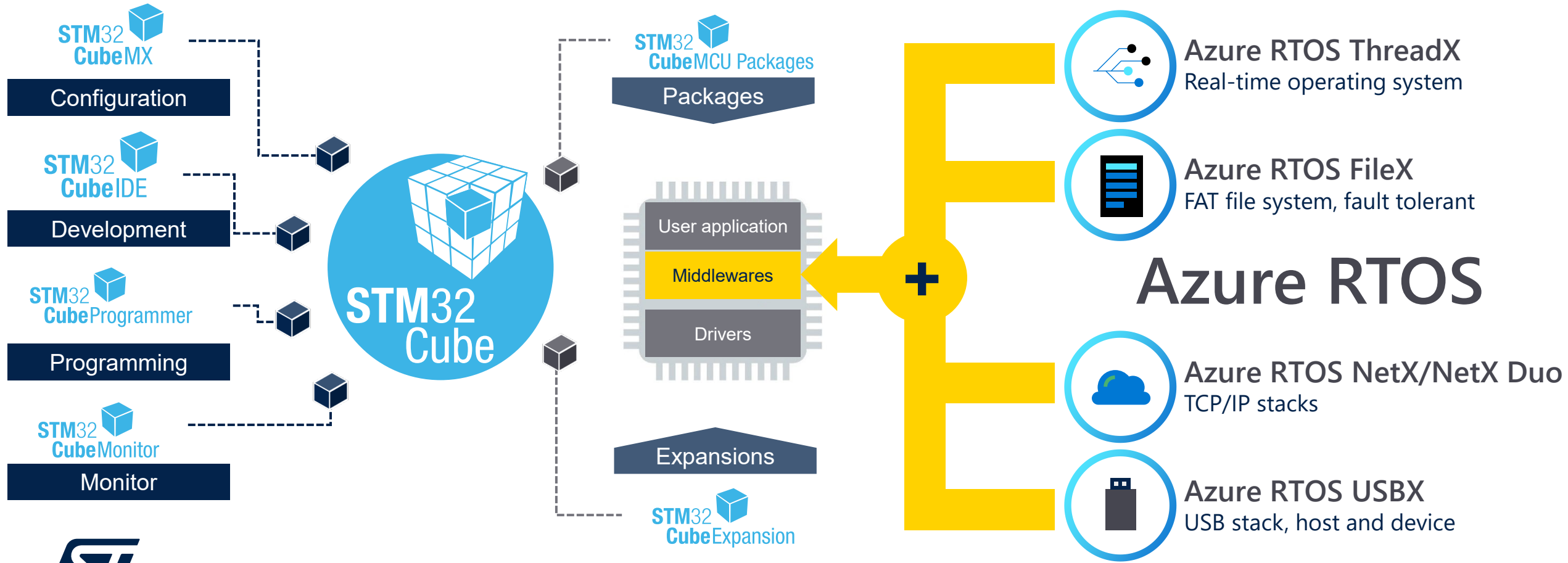
Software Tools



Embedded Software



Complemented with Microsoft Azure RTOS (2021)





On-going - STM32Cube Software Suite (2/2)

Microsoft Azure RTOS bringing additional Key benefits to STM32Cube software Suite, from 2021

Software Tools



Embedded Software



Faster & Easier Development

Business-friendly terms

Better Quality

+ Azure RTOS

Fast performance

+

Complete consistent solution

Industry certifications



Microsoft Azure RTOS: Key Features

Professional grade, highly reliable and market proven MW suite

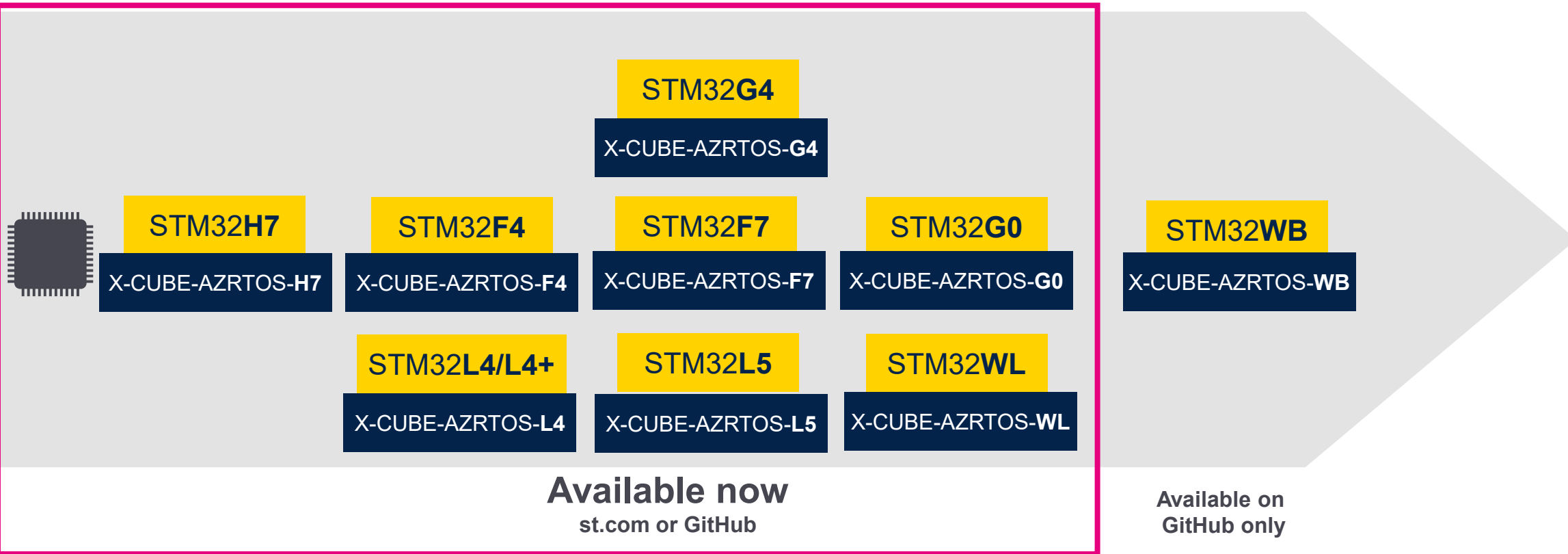
- **Industrial grade** networking stack: optimized for performance coming with **many IoT protocols**
- Advanced FS/FTL: **fully featured** to support **NAND/NOR Flash** memories
- **USB Host** and **Device** stacks coming with **many classes**
- **Safety pre-certifications (from MSFT)**: IEC 61508 SIL4, IEC 62304 Class C and ISO 26262 ASIL D
- **Security pre-certifications (from MSFT)**: EAL4+ for TLS/DTLS, FIPS 140-2 for SW crypto lib
- **STM32 granted production license:**
<https://github.com/azure-rtos/guix/blob/master/LICENSED-HARDWARE.txt>



Azure RTOS Deployment within STM32 and STM32Cube portfolio

Through STM32Cube Expansion and MCU Packages from 2021 and on for several existing STM32 series

Azure RTOS Deployment

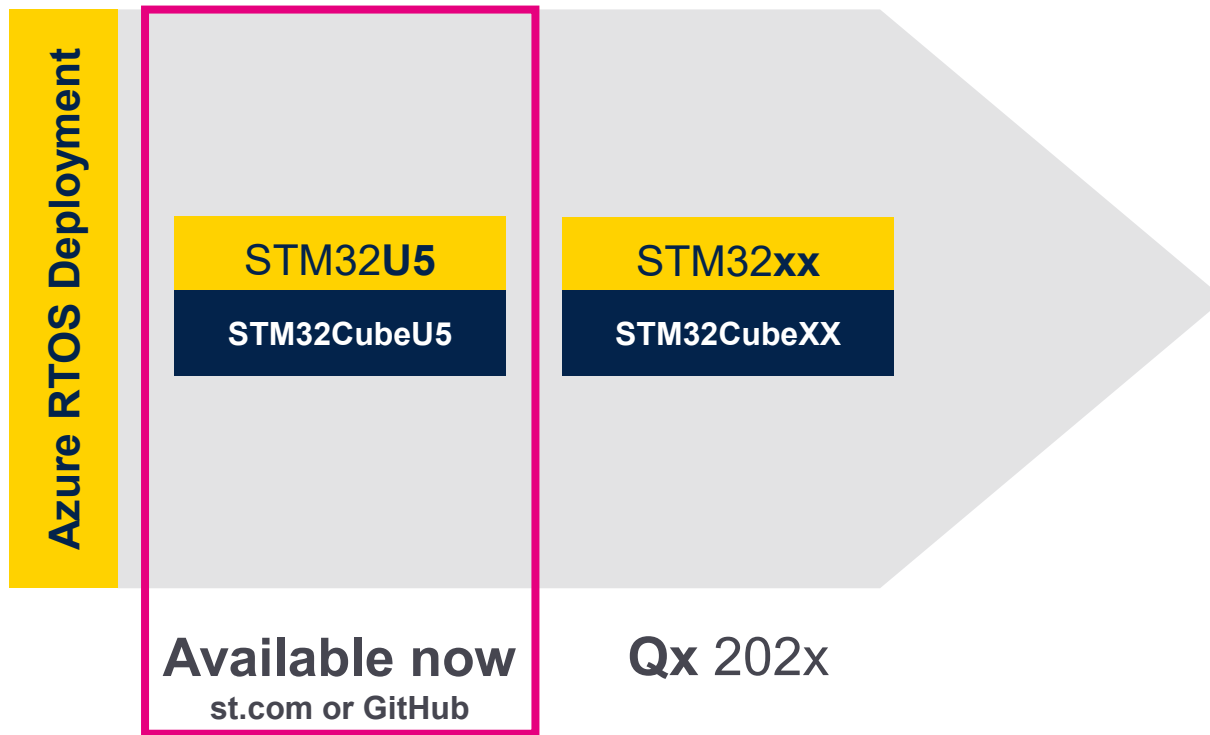
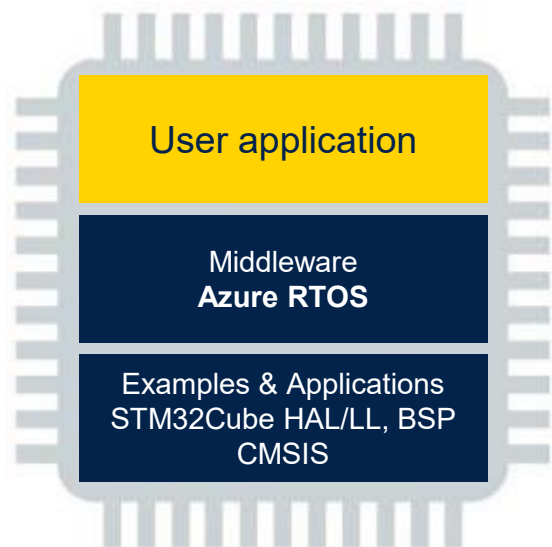




Azure RTOS deployment within STM32 and STM32Cube portfolio

STM32Cube native support for new STM32 series from 2021 onward

STM32Cube MCU package





Getting started with Azure RTOS examples

Start from STM32CubeMX or from ready-to-use examples to easily get up to speed with Azure RTOS

Azure RTOS ThreadX



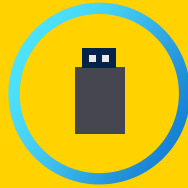
Thread

Creation, Synchronization,
message queue

OS wrappers

FreeRTOS
CMSIS OS

Azure RTOS USBX



Host

MSC, HID, CDC ACM
Dual class

Device

MSC, CDC ACM,
HID, CDC ECM,
HID CDC ACM (dual-class)

Azure RTOS NetX Duo



TCP

Server, Client

UDP

Server, Client

Application

Web server, MQTT client, SNTP
client

Azure RTOS FileX



Micro SD File edit

Multi-thread access

NOR memory File RW

NAND memory File RW

Multi-instance

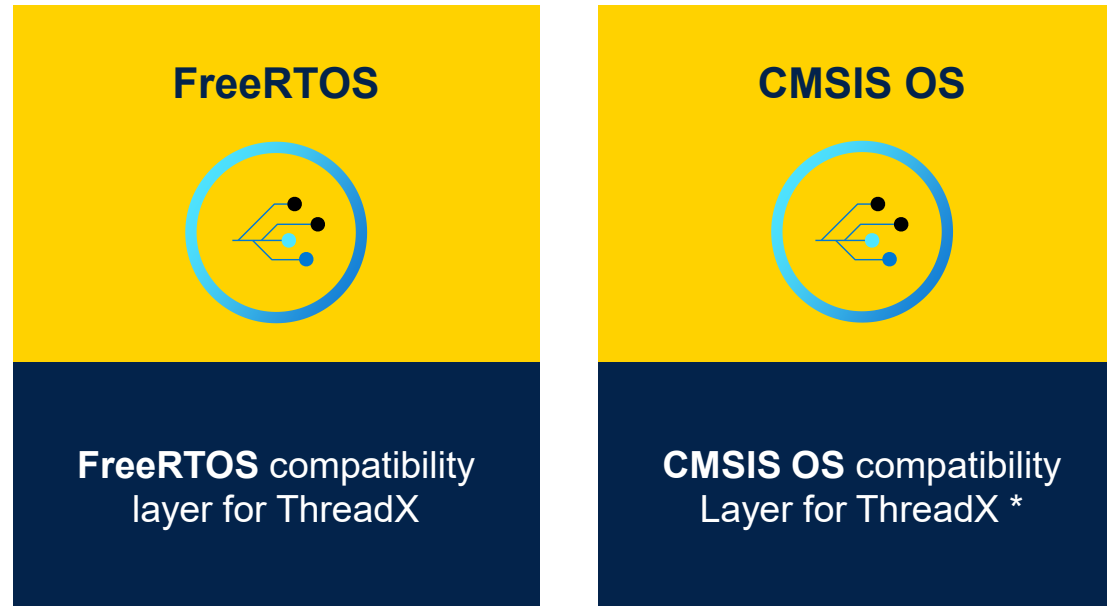
In-Application-Programming





Migrate to Azure RTOS

Keep your application layer, simply integrate an industry-leading real time operating system



* Offer exclusive to the STM32



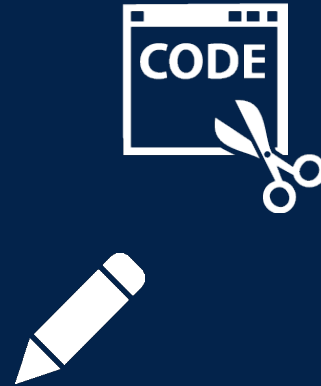
Azure RTOS supported by STM32Cube Toolset

Supporting Azure RTOS ThreadX-aware debugging

Project configuration
with STM32CubeMX



Code development
Advanced IDE



Debugging and
programming



Azure RTOS
OS awareness

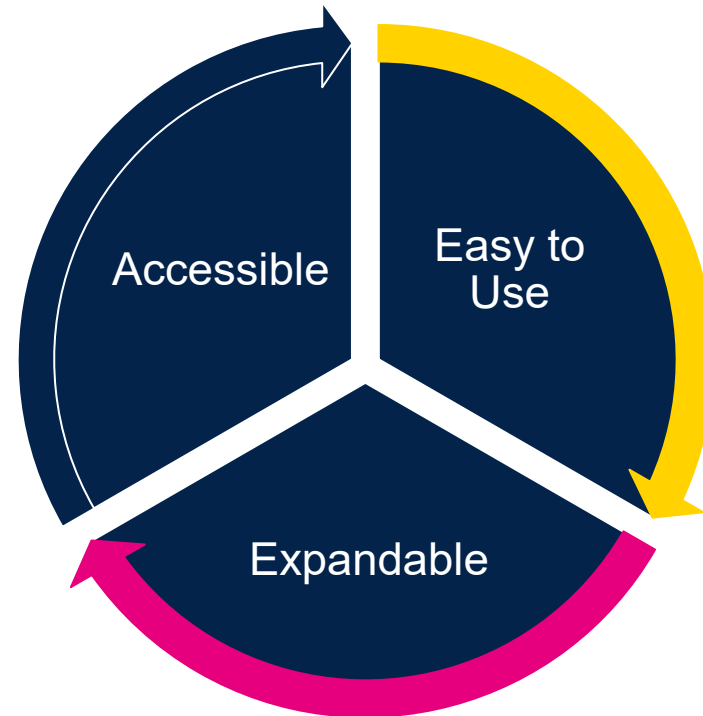




Azure RTOS and STM32Cube: User Benefits

Getting the most out of Azure RTOS and STM32 MCUs is now easier than ever with STM32Cube

Source code available
Free of charge
User-friendly license terms



Drastically reduced learning curve:

- Azure RTOS made compatible with ST Toolset
- Many applicative examples provided
Developers can focus on their application and differentiators

Expanding the ecosystem of existing and upcoming STM32 series by leveraging the Azure RTOS middleware

Our technology starts with You



Find out more at www.st.com/STM32Cube

© STMicroelectronics - All rights reserved.

ST logo is a trademark or a registered trademark of STMicroelectronics International NV or its affiliates in the EU and/or other countries.

For additional information about ST trademarks, please refer to www.st.com/trademarks.

All other product or service names are the property of their respective owners.



life.augmented