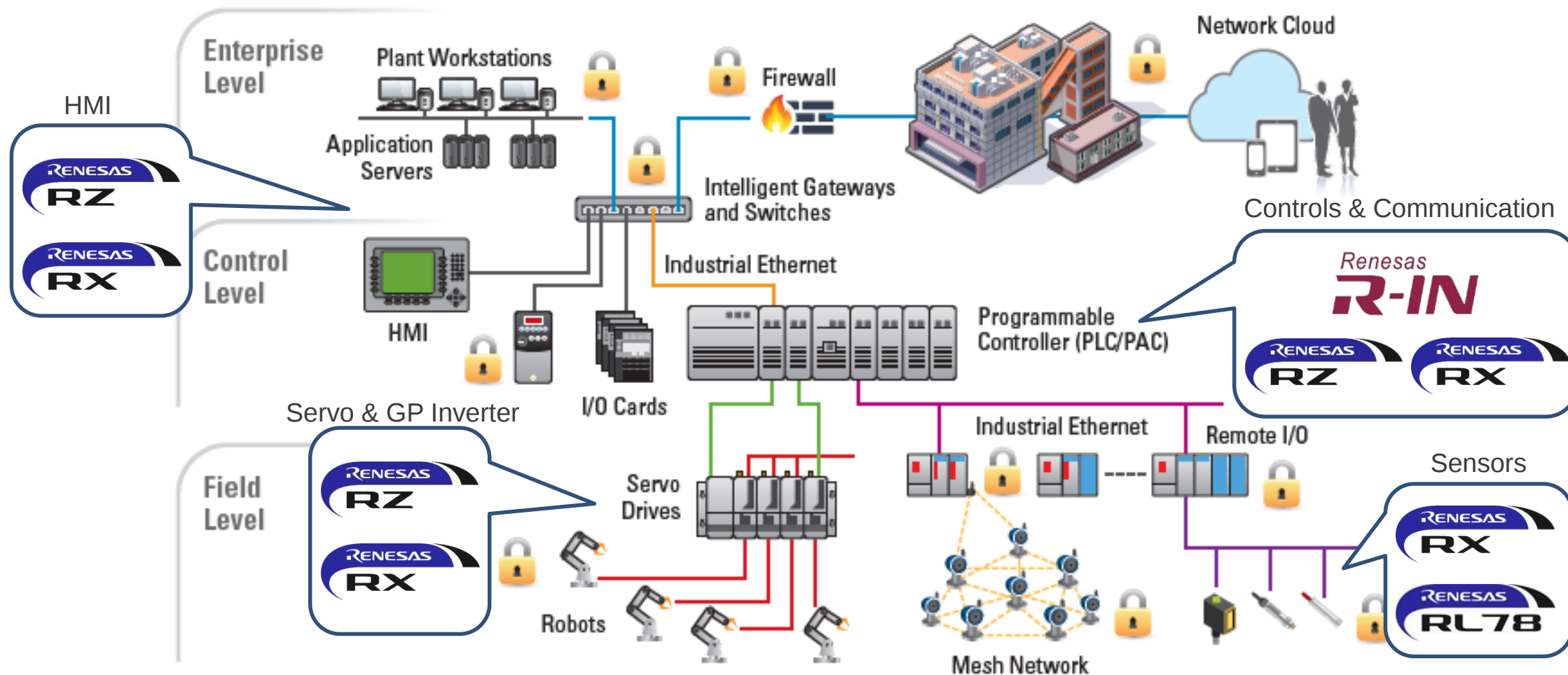


WHERE WE ADDRESS



RENESAS' INDUSTRIAL NETWORK CONTROLLERS

PROFINET Controller	EtherCAT Controller	Multi Protocol Controller		New product March 2017
 TPS-1 2Port (w/PHY) PROFINET CPU  PROFINET V2.3 IRT Support for Network module				

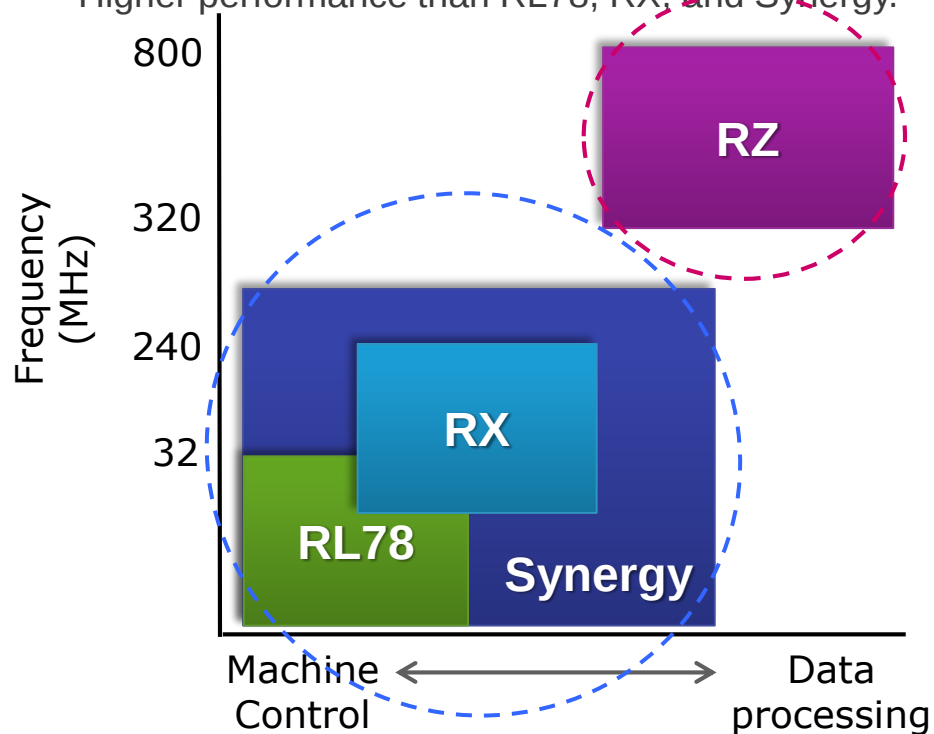
Concept of RZ Family

RZ FAMILY

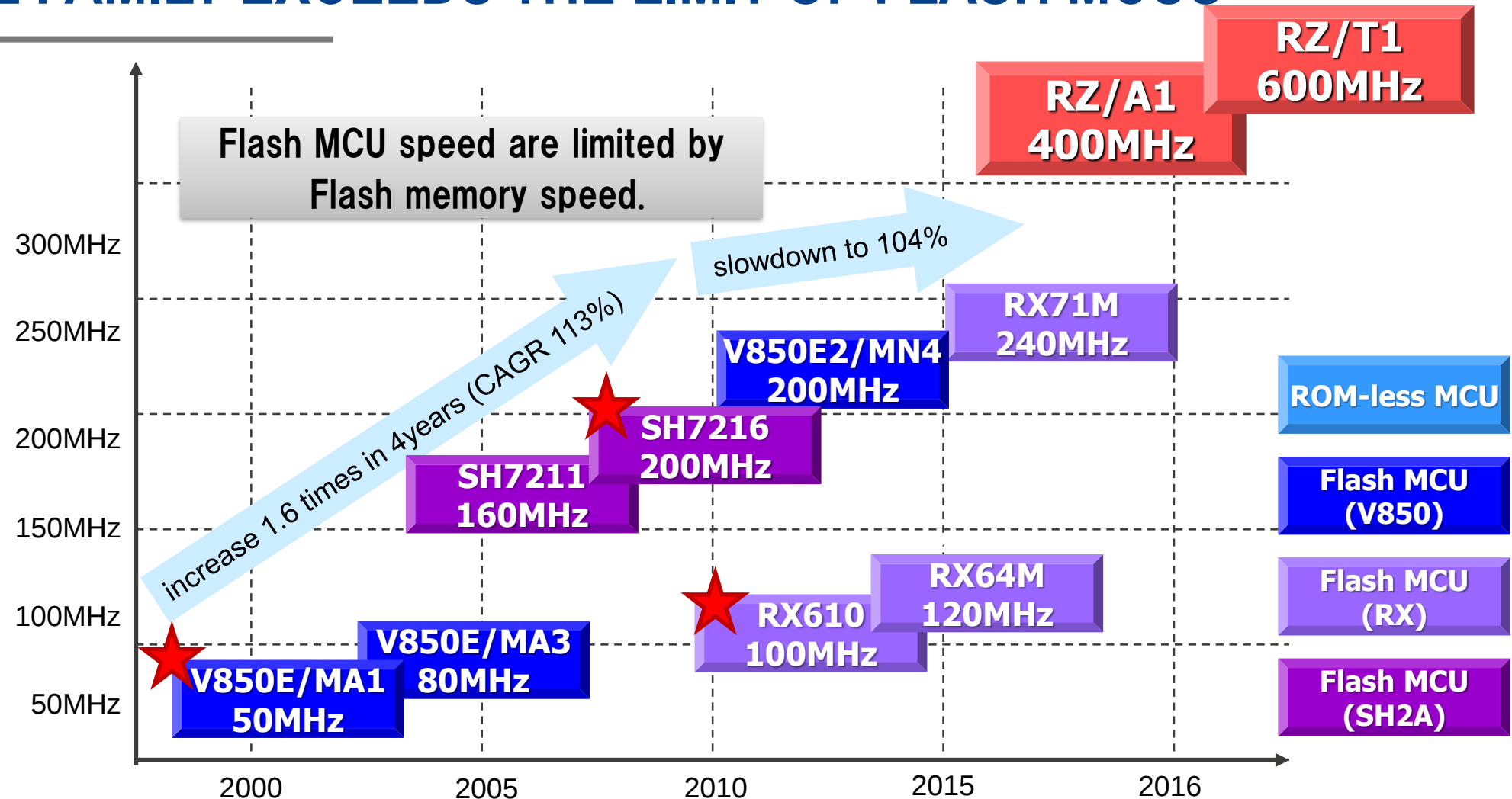
“RZ” Positioning

The family targeting software rich, high-end micro-computer market.

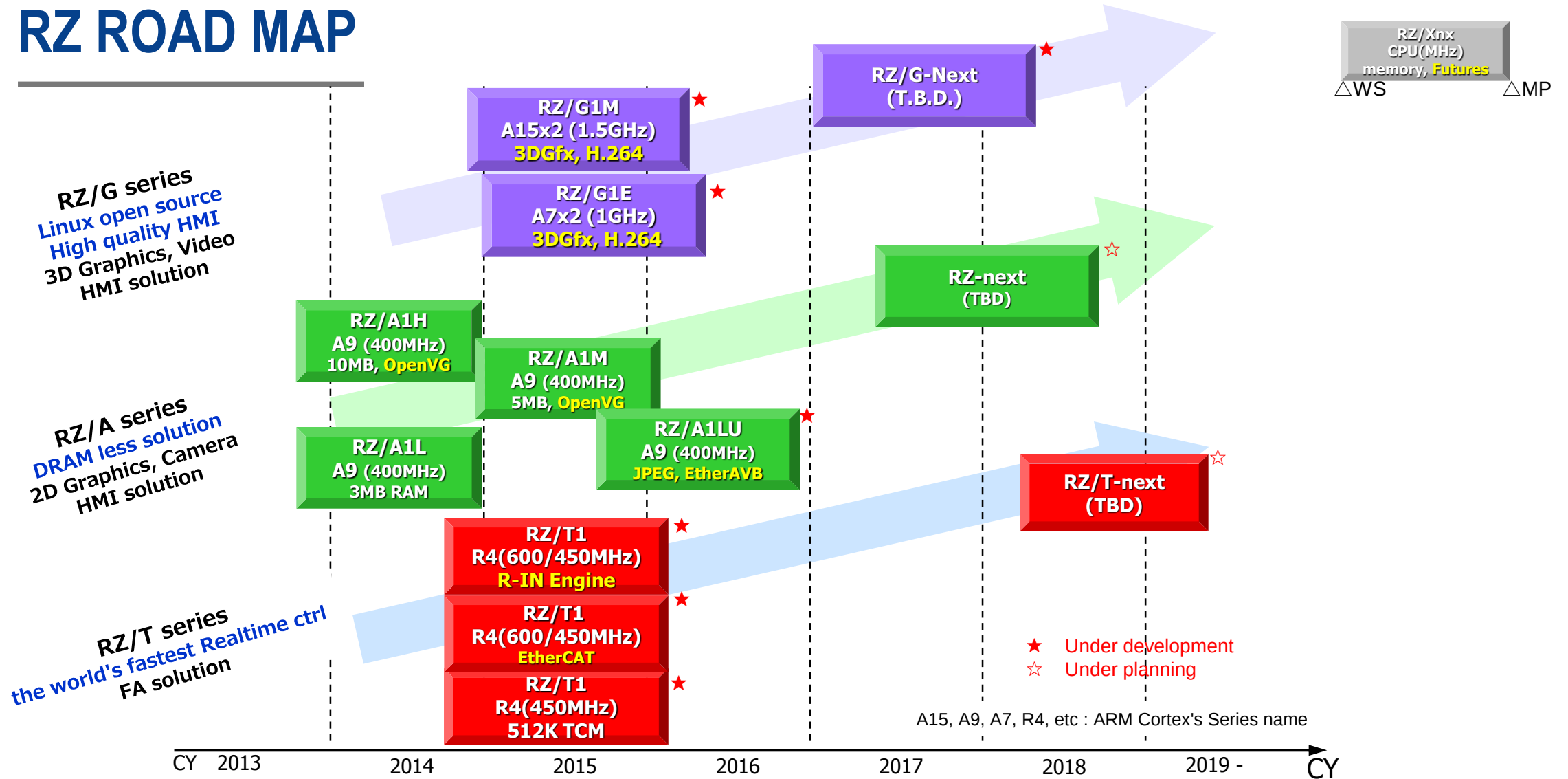
Higher performance than RL78, RX, and Synergy.



RZ FAMILY EXCEEDS THE LIMIT OF FLASH MCUS



RZ ROAD MAP



Differentiations of RZ/T1

RZ/T1 THREE DIFFERENTIATIONS

High-end realtime MCU with multi-protocol industrial Ethernet and multi-protocol encoder I/F, offers 1 chip AC servo/drive solution.

(1) High performance real-time CPU core with FPU

+

Large size (544KB) TCM
(Tightly Coupled Memory)

600MHz operation frequency and TCM realize high-speed and deterministic execution times for real-time application.

ARM

Feature 1 :

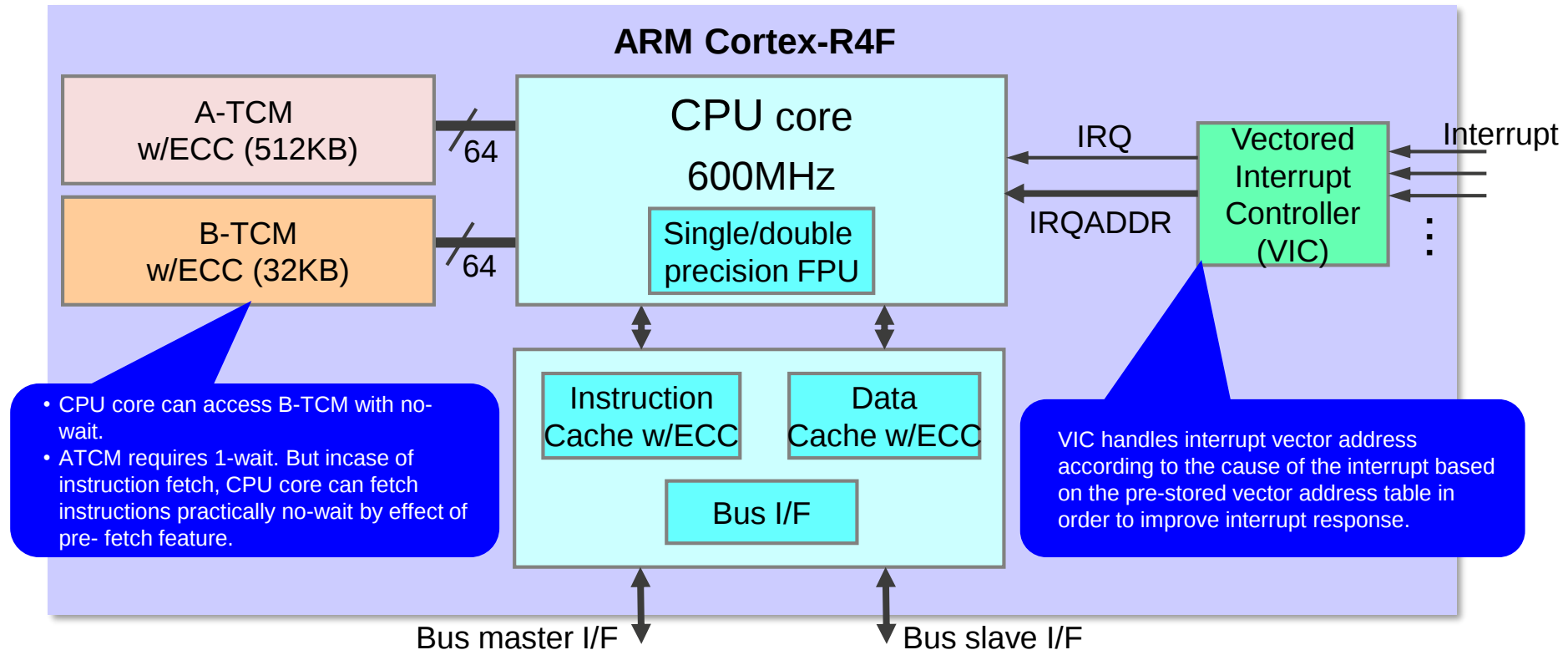
Super Real-time CPU with TCM

FEATURE1: SUPER REAL-TIME PERFORMANCE

Tightly Coupled Memory(TCM) provides practical no-wait access for realizing high speed processing and deterministic real-time response without cache.

Vectored interrupt controller (VIC) improves interrupt latency.

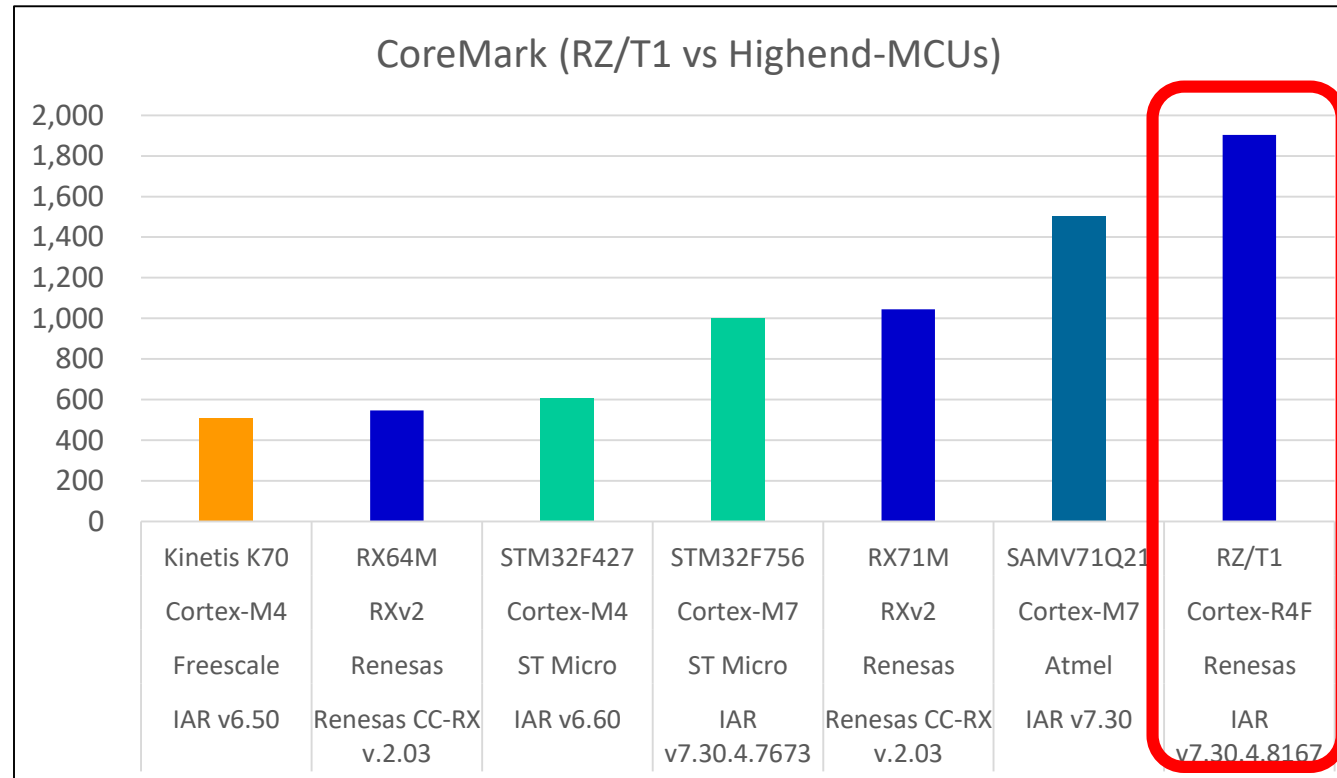
ECC is supported for all memory.



WORLD'S HIGHEST PERFORMANCE IN REAL-TIME MCUS

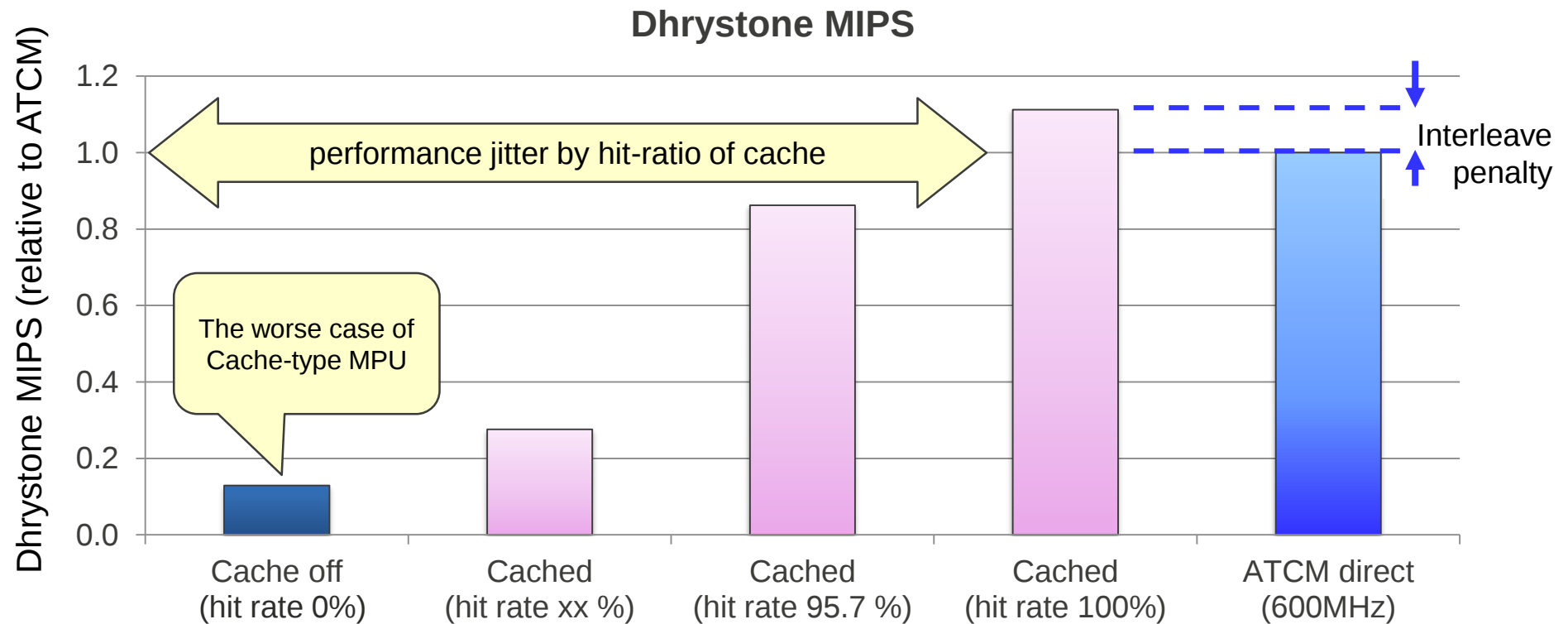
CoreMark benchmark result was released on the EEMBC web.

RZ/T1 achieved 1900CM and substantially exceeded competitor's real-time MCUs.



EXECUTION TIME JITTER DUE TO CACHE MEMORY

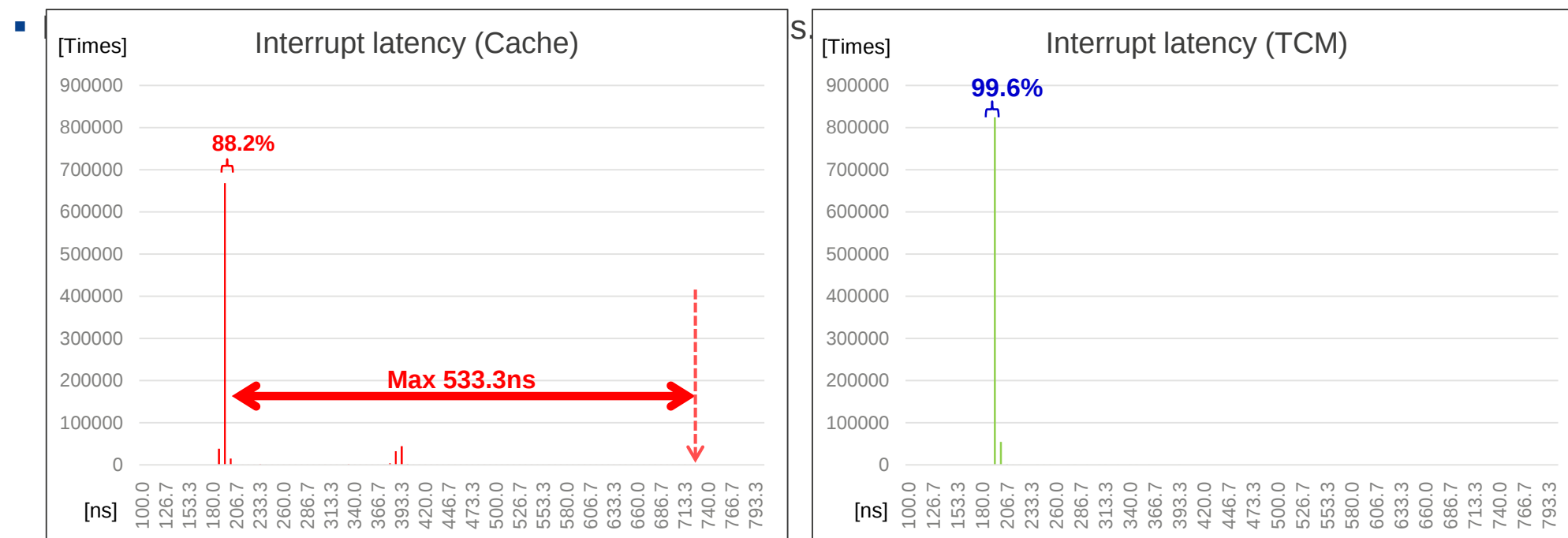
The worst-case execution time is important for Real-time applications.
Cache-type MPU has jitter in exec time, can not guarantee a peak performance.



JITTER OF INTERRUPT LATENCY (TCM VS CACHE)

Measured normal ISR response time using both TCM and Cached memory.

- CoreMark runs in background as processing load.
- Runs on TCM : 99.6% of ISR responses are within 193ns-200ns. Maximum jitter is 200ns.



Feature 2 :

Multiprotocol Ethernet Accelerator "R-IN engine"

Feature 3 :

Encoder I/F for Absolute Encoder

[Renesas.com](https://www.renesas.com)