Hello, and welcome to this presentation of the ARM® Cortex® -M4 Core.
In addition to the main Cortex® -M7 CPU, the STM32H747/H757 and STM32H745/H755 microcontrollers integrate a Cortex® -M4 core in order to benefit from the powerful performance of the 32-bit processor architecture and particularly of the high level of deterministic processing.
Based on the ARM Cortex-M4 core, the STM32H7 series doubles the DSP capability of a single cycle DSP MAC for data processing and the single-precision FPU performance. In addition to the computation capability offered by the ARM® Cortex® -M7 core, the STM32H7 offers more control performance and enhanced execution determinism.
Many application domains can benefit from the dual-core architecture of the STM32H745/755/747/757 devices.

<table>
<thead>
<tr>
<th>Core</th>
<th>Consumer</th>
<th>Industrial</th>
<th>Medical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cortex-M7</td>
<td>Advanced user interface, high performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cortex-M4</td>
<td>Deterministic sensor control</td>
<td>Real-time control and monitor</td>
<td>Real-time</td>
</tr>
</tbody>
</table>
The Cortex®-M4 in the STM32H7 microcontroller offers support for 8 independent memory regions, with independent configurable attributes for:
- Access permission: read/write allowed or not in privileged/unprivileged mode,
- Execution permission: executable region or region prohibited for instruction fetch,
- And cache policies that affect ART accelerator instruction cache behavior
For more details, please visit the ARM website at the following link:

For more details, please visit the ARM website on which you can find all information about the Cortex-M4 core.