

# TRIPLE STACK

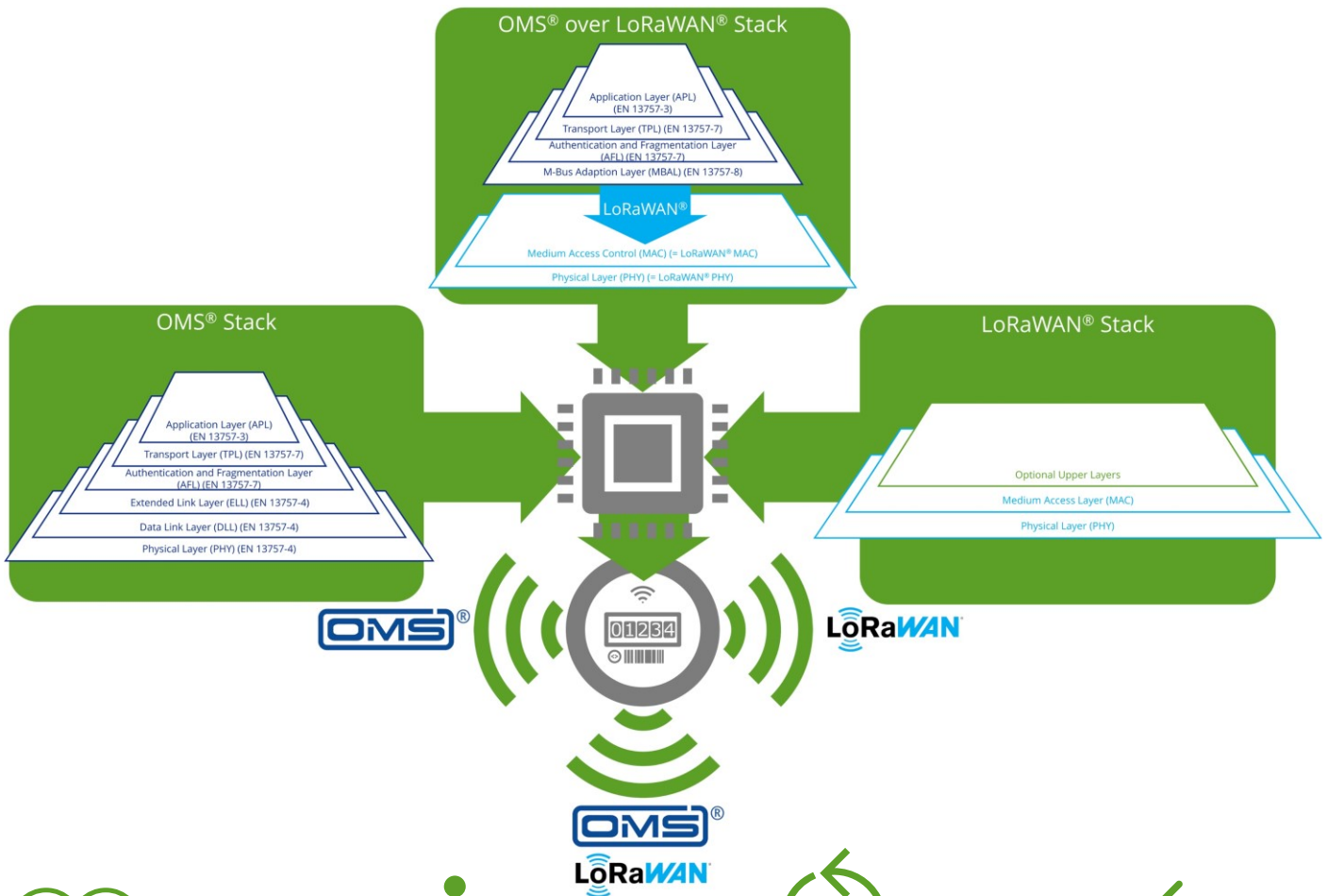
## OMS<sup>®</sup> v4.5.1 + LoRaWAN<sup>®</sup> v1.0.4 + OMS<sup>®</sup> over LoRaWAN<sup>®</sup>

Flexibility at its best – the triple stack for end points combines three individual stacks in one comprehensive software solution. By integrating this triple stack into your devices, you provide your customers with a product that is as flexible as their various use cases.

You develop interoperable devices with the latest OMS<sup>®</sup> v4, LoRaWAN<sup>®</sup> and TR06 specified communication.

Using multiple protocols within one stack may require a bit more memory overall, but this aspect is negligible compared to the application-level benefits of the stack.

The user cannot only decide on-the-fly or during compile time what kind of communication is needed, but also set a protocol priority for each possible state of a system. This flexibility makes your device an all-rounder for your customers!



Combination of OMS<sup>®</sup> interoperability with long range of LoRaWAN<sup>®</sup>



Remote meter reading enabled by fixed networks and drive-by / walk-by



Backup solution: communication via OMS<sup>®</sup> / wM-Bus if fixed network has no connection



Switching of stacks "on-the-fly" and during compile time

## SUPPORTED SPECIFICATIONS

- EN 13757 (Wireless M-Bus)
- Open Metering Standard (OMS®)
- LoRaWAN® v1.0.4
- LoRaWAN® Regional Parameters v1.0.3
- OMS® over LoRaWAN® (acc. to TR06 v2.0.8) specification

## STACK FEATURES

### OMS® v4.5.1 / Wireless M-Bus

- Operation modes S, T or C
- Security profiles A, B, D (encryption modes 5, 7, 10)
- OMS® Annex C „Sensor“ compatibility
- OMS® Annex M "Requirements for OMS® use case support"
- Enables optimization of TRX timing

### LoRaWAN® v1.0.4

- Class A & C
- OTAA & ABP
- Pre-certified for several regions: EU868 / US915 / AU915 / AS923
- Application Layer Support
  - Apl. Layer Clock Sync v1.0.0
  - Remote Multicast Setup v1.0.0
  - Frag. Data Block Transport v1.0.0

### OMS® TR06 v2.0.8 compliant

- Standardized exchange of M-Bus application data via LoRaWAN®

## REFERENCE HARDWARE

STM32WL55 / WLE

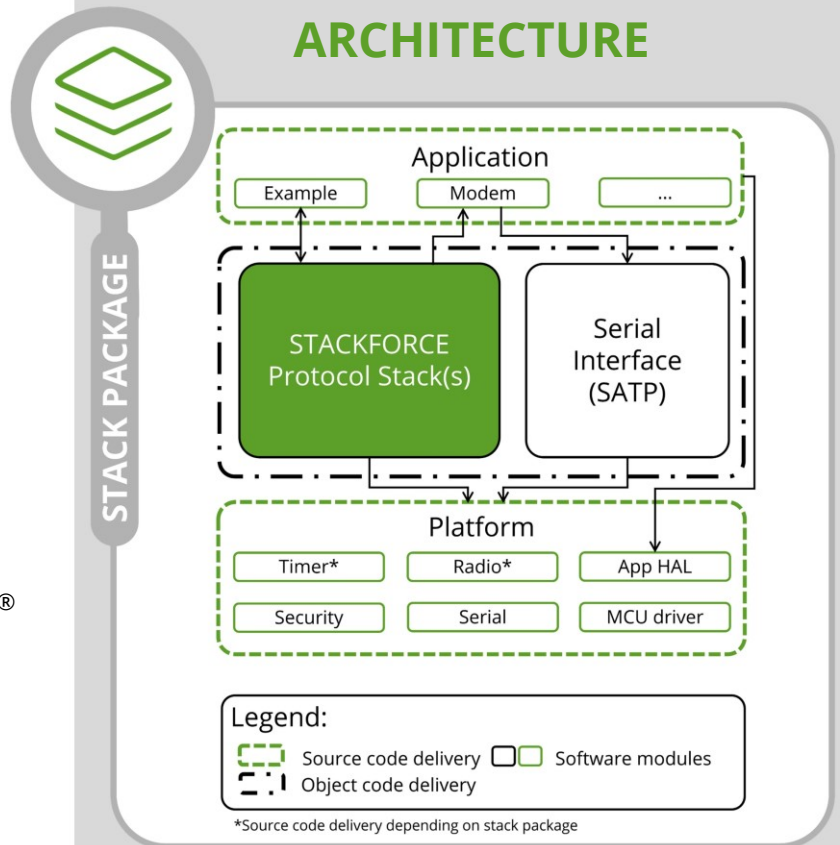
## STACK CHARACTERISTICS

### Memory requirements\*

	Library	Applications, HAL, drivers, other software
Flash	~ 90 kB	~ 25 kB
RAM	~ 6 kB	~ 7 kB

\* The code sizes described above specify the typical required memory for operating the full featured protocol stack as a library including related drivers. Values based on reference hardware. The RAM requirements for LoRaWAN® FUOTA are not included in the values, as these are very dependent on the application.

## STACK PACKAGE ARCHITECTURE



## YOUR BENEFITS



On-the-fly configuration:  
Quick stack adaption to different use cases



Optimized footprint when using a triple stack compared to using three single stacks.



Platform Interface now available as source code:

- Customization and fine tuning of platform driver
- Customization of radio settings (e.g., frequency)



User-defined protocol priority to be set for each possible state of a system