Standards and specifications

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This regular column provides news from standardization bodies and nonprofit associations regarding CAN-related documents. Covered are also recommended practices, application notes, implementation guidelines, technical reports, and open-source projects.

CiA profile maintenance and new feature requests

CiA has published several application, device, and interface profile specifications. They are systematically reviewed based on submitted comments and new feature requests.

In general, CiA documents are in several states during their life cycle. It starts with a Work Draft (WD) followed by the first released state called Draft Specification Proposal (DSP), which is only available to CiA members. Normally, after one year a DSP is systematically reviewed, considering the experiences made by first implementations. Documents released as Draft Specifications (DS) are somehow mature, but still only available for CiA members. This has changed recently, when the CiA Business Committee decided, not to sell anymore CiA technical documents (specifications and technical reports). DS-rated documents are systematically reviewed at least after five years. The CiA Technical Committee can also release a CiA document as Public Available Specification (PAS) on request.

Most of the CiA technical documents relate to application, device, and interface profiles. Application profiles specify process data, configuration parameters, and diagnostic information of the default behavior of the connected devices of a dedicated application (e.g., lift control system, refuse-collecting systems, or fire-fighting equipment). Device profiles just specify this for a dedicated type of devices (e.g., encoder, electrical drive, or medical contrast-media injector). Interface profiles relate to gateways and other external interfaces providing modules featuring CAN connectivity.

Most of the CiA profiles are in DSP and DS status. The CiA Interest Group 03 (IG Profiles) coordinates and manages the development of them. The detailed editorial work on CiA profile specifications is done in CiA Special Interest Groups (SIGs) and for some profile specifications by the IG Profiles. New functional features for CiA 418 (battery profile) and CiA 419 (charger profile) are discussed within the IG Profiles. Next year, the following documents are in systematic review:

- CiA 412 series (medical collimator and dosemeter)
- CiA 425-1 (general definitions for contrast-media injectors)
- CiA 443 (subsea devices)

For the following CiA profiles the revision has been started, already:

- CiA 402 series (motion controllers and drives)
- CiA 415 (sensor systems for construction and earth-moving machines)
- CiA 417 (lift control systems)
- CiA 422 (equipment for refuse-collecting vehicles)
- CiA 425 (medical contrast-media injectors)
- CiA 447 series (add-on devices for special-purpose cars)
- CiA 456 (configurable network infrastructure devices)

Next year, CiA is going to organize workshops, in which new profile specifications are discussed in detail. The following topics are covered:

- Application profile for controlled environment agriculture (CEA) systems (covering greenhouse automation and vertical farming)
- Profiles for livestock automation
- Profiles for AGV/AMR embedded networks (including modular (service) robotics)
- Profile for embedded networking in light electric vehicles (LEVs)

CiA welcomes additional proposals. Comments on released CiA profile specifications as well as new feature requests are appreciated at any time.

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Brief news

- ***CiA 437 series:*** CiA has published a new version of the CANopen application profile for grid-based photovoltaic systems. This series comprises three documents, specifying process data, configuration parameters, and diagnostic information.
- ***CiA 446:*** The updated CANopen interface profile for AS-i gateways has been improved regarding proper references and editorial issues.
- ***ISO 11783-3:*** The Isobus application, transport, and network layer standard has passed successfully the DIS (draft international standard) ballot. Due to the submitted technical comments, it is necessary to initiate an FDIS (final DIS) ballot within the next month.
- ***ISO 11898-2:*** Due to some weaknesses in the 3rd edition, a document revision was initiated. The DIS ballot of the 4th edition has been passed successfully, receiving just editorial and general comments. The publication of this edition is expected beginning of 2026.
- ***ISO 15765 series:*** ISO/TC 22/SC 31/WG 2 is going to revise the CAN-related transport/network (DoCAN) documents to support the CAN XL data link layer as specified in ISO 11898-1:2024.
- ***ISO/TC 347/ AHG 6:*** CiA office observes this ad-hoc group (AHG), evaluating standardization of livestock automation. CiA is a liaison partner of the ISO technical committee (TC) specifying agri-food systems. *hz*