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English Version

Postal services - Open Interface between Machine Control and Reading Coding System - MC/RC-Interface

Services postaux - Interface ouverte entre le système de Contrôle de la Machine et le système de Reconnaissance et de Codage - Interface MC/RC

Postalische Dienstleistungen - Offene Schnittstelle zwischen Maschinensteuerung und Lese- und Codier-System - MC/RC-Schnittstelle

This Technical Specification (CEN/TS) was approved by CEN on 4 June 2011 for provisional application.

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Foreword

This document (CEN/TS 16238:2011) has been prepared by Technical Committee CEN/TC 331 “Postal Services”, the secretariat of which is held by NEN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

There is a growing demand for postal operators to combine parts of their sorting automation equipment from different suppliers in order to optimise performance. In the past, this has led to project-specific interfaces being negotiated between one postal operator and one or multiple suppliers. These project-specific interfaces were developed by the suppliers and maintained for an agreed period. This approach has several disadvantages:

— The interface is derived from an interface that was not intended to be open.

— The interface is developed for a single project and works only in the context of that project (extra costs).

— Each participating supplier has to implement the interface (multiple effort).

— Experience shows that integration of components with project-specific interfaces is complex and expensive.

— Project-specific interfaces are not integrated into the product line and once the initially agreed maintenance period is over it may be difficult and expensive to maintain and/or may hinder the adoption of equipment upgrades.

This has led to “open interfaces” defined by one supplier. These still have the disadvantage of being in product use only by one supplier. Within a group of postal operators and suppliers it was decided to develop a set of “open standard interfaces” which will be developed by the suppliers and referred to by the postal operators. The benefits of these interfaces are expected to be that they:

— are fixed in an international standard (with change control);

— are agreed and implemented by major suppliers;

— are agreed by customers and therefore used in calls for tenders;

— will result in net savings with the high initial development effort and consequent higher basic equipment prices being more than offset by reduced project development, integration and maintenance costs;

— will minimize the need for project integration effort by reducing implementation timescales;

— will increase competition between suppliers by stimulating product improvements;

This Technical Specification covers the interface between an image controller (IC), the scanner subsystem including the scanner related image processing (IP) devices and the machine control (MC) subsystem of postal automation equipment. One related standard is CEN/TS 15448, *Postal Services – Open Standard Interface between image controller and enrichment devices (OCRs, video coding systems, voting systems)*.

Other work items (subject to agreement of CEN/TC 331 and the UPU Standards Board) will be defined to cover other areas as and when the need is identified and the resources for development become available. A separate project group for each interface will undertake the work.

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1 Scope

This Technical Specification describes the “Open Standard Interface between Image Processor, Machine Control and Image Controller” (IP/MC/IC Interface) in the context of postal automation equipment.

The following architectural overview is the basis for this interface standardization:

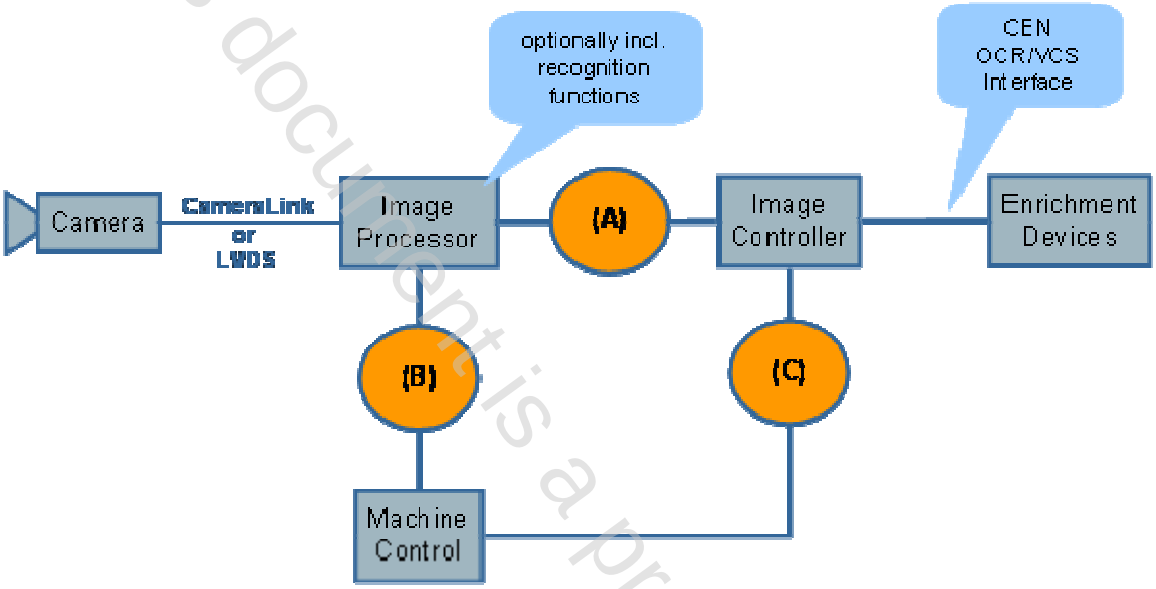

Figure 1 — System overview

It was agreed to unify the interfaces between

a) Image Processor and Image Controller,

b) Image Processor and Machine Control and

c) Machine Control and Image Controller

and to produce one common specification for this so-called **IP/MC/IC Interface**.

The communication partners of this interface will be called Machine or Machine Control (MC) on the one side and Reading/Coding (RC) System on the other side.

There may be several instances of this interface, depending on the implementation of the MC and the connected RC.

NOTE interfaces for synchronizing the lifted images with their mailpiece_IDs provided by the machine are not shown in the figure above and are not subject of standardization within the first release of this interface.

From the customer point of view, the following two scenarios are relevant. The systems MACHINE and RC SYSTEM are to be considered as “black boxes” thus not detailing internal system structure and interfaces.

1) The Machine already includes Camera and Image Processor and will be connected to a 3rd-party RC System including Image Controller and Enrichment Devices.

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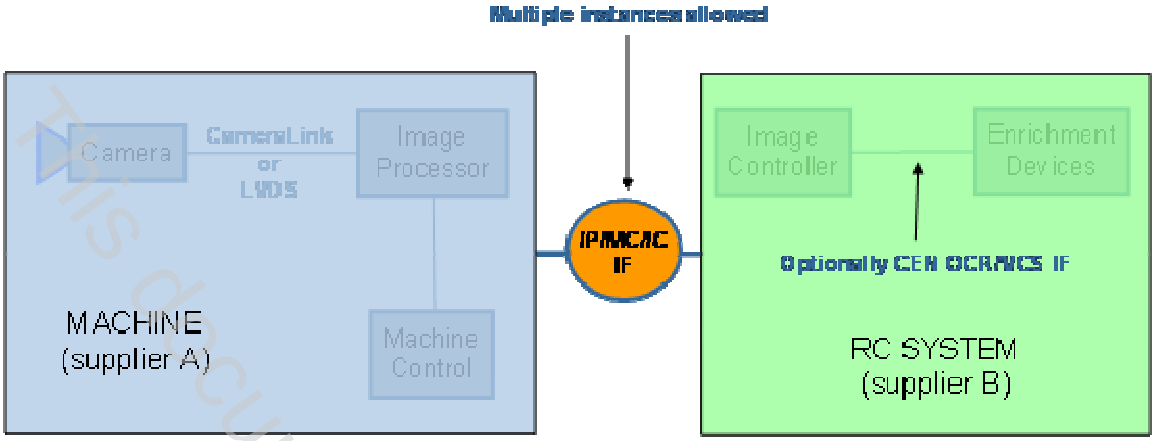

Figure 2 — System interfacing scenario 1

2) The Machine will be connected to a 3rd-party RC System including Camera, Image Processor, Image Controller and Enrichment Devices. The Camera and (possibly) the Image Processor will have to be mechanically integrated into the machine.

NOTE The camera can be provided by any 3rd-party. This should not impede on the IP/MC/IC interfaces !

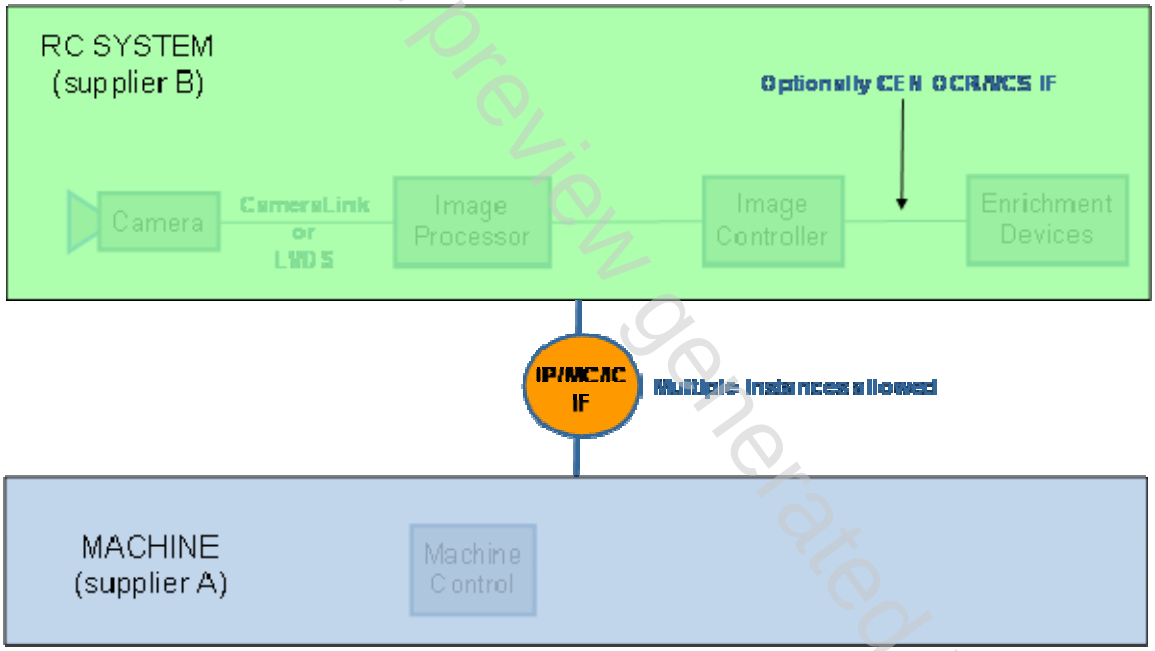

Figure 3 — System interfacing scenario 2

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This standard is arranged under four main clauses as described in Figure 4.

— UCM (Use Case Model) describes the use cases for the IP/MC/IC Interface using sequence diagrams with messages.

— IDD (Interface Design Description) defines the data model for the IP/MC/IC interface.

— SDD (System Design Description) defines the mandatory specification of the IP/MC/IC interface in terms of architecture, services and behavioural models. In the Common Part of this clause no middleware or transport layer is specified. The common part of this clause is intended to be middleware-independent.

— SDD-TCP/IP, SDD-CORBA, SDD-SOAP in these specialized clauses. The specifications for three compatible transport solutions TCP/IP, CORBA and SOAP are provided. Further middleware solutions can be added when available, provided that they are fully compatible with the Common Part.

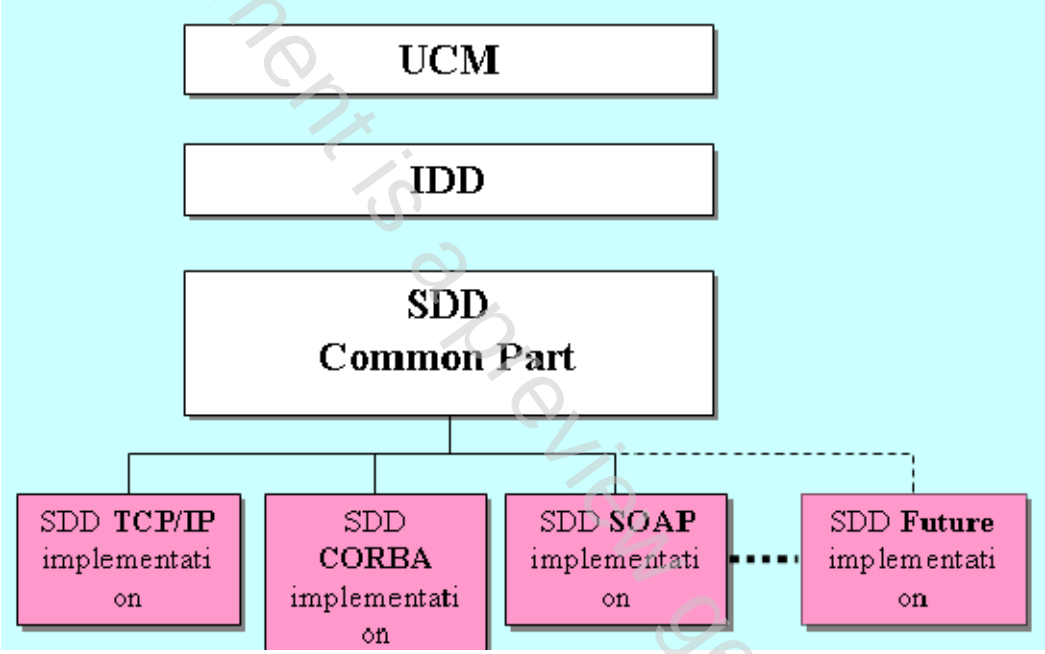

Figure 4 — IP/MC/IC Interface Document Structure

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, or references to a version number, only the edition cited applies. For undated references and where there is no reference to a version number, the latest edition of the referenced document (including any amendments) applies.

— CEN/TS 15448, *Postal Services – Open standard interface between image controller and enrichment devices (OCRs, video coding systems, voting systems)*

3 Terms and definitions

3.1
actor
coherent set of roles which users of uses cases play when interacting with these use cases. An actor has one role for each use case with which it communicates. See [1]

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