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Digital data communications for measurement and control –

Part 1: Profile sets for continuous and discrete manufacturing relative to fieldbus use in industrial control systems

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

DIGITAL DATA COMMUNICATIONS FOR MEASUREMENT AND CONTROL –

Part 1: Profile sets for continuous and discrete manufacturing relative to fieldbus use in industrial control systems

FOREWORD

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International Standard IEC 61784-1 has been prepared by subcommittee 65C: Digital communications, of IEC technical committee 65: Industrial-process measurement and control.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
65C/294/FDIS	65C/302/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until 2007. At that date this publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

The contents of the corrigendum of July 2004 have been included in this copy.

Withdrawn

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INTRODUCTION

This part of IEC 61784 provides a set of communication profiles in the sense of ISO/IEC TR 10000-1. These answer the need of identifying the protocol families co-existing within the IEC 61158 series, as a result of the international harmonisation of fieldbus technologies available on the market. More specifically, these profiles help to correctly state the compliance to the IEC 61158 series, and to avoid the spreading of divergent implementations, which would limit its use, clearness and understanding. Additional profiles to address specific market concerns, such as functional safety or information security, may be addressed by future parts of this standard.

This standard contains several communication profile families, which specify one or more communication profiles. Such profiles identify, in a strict sense, protocol subsets of the IEC 61158 series via protocol specific communication profiles. They do not define device-type-specific communication profiles for the purpose of guiding manufacturers in feature set selection – for example, in selecting the minimum set of communication services and protocol to implement a specific class of devices, such as generic slaves or transmitters ("implementation profiles"). Neither do they define device profiles that specify communication profiles together with application functions needed to answer the need of a specific application ("application profiles").

It is agreed that these latter classes of profiles would help the use of the IEC 61158 series of standards; the profiles defined in this document are a necessary step to achieve that task.

It is also important to clarify that interoperability — defined as the ability of two or more network systems to exchange information and to make mutual use of the information that has been exchanged (see 3.2.1 of ISO/IEC TR 10000-1) — can be directly achieved on the same link only for those devices complying to the same communication profile.

Profiles contained in this International Standard are constructed of references to IEC 61158-2 through IEC 61158-6 and other IS, TS or worldwide-accepted standards, as appropriate¹. Each profile is required to reference at least one part of IEC 61158-2 through IEC 61158-6.

Two or more Profiles, which are related to a common family, are specified within a "Communication Profile Family" (CPF).

¹ International Standardised Profiles may contain normative references to specifications other than International Standards; see ISO/IEC JTC 1 N 4047.