# INTERNATIONAL STANDARD

## ISO/IEC 9506-2

First edition
1990-10-15

AMENDMENT 1
1993-07-01

Industrial automation systems — Manufacturing Message Specification —

Part 2:
Protocol specification

AMENDMENT 1: Data exchange

Systèmes d'automatisation industrielle — Spécification de messagerie industrielle —

Partie 2: Spécification du protocole

AMENDEMENT 1: Échange de données

# Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Amendment 1 to International Standard ISO/IEC 9506-2:1990 was prepared by Technical Committee ISO/TC 184, *Industrial automation systems*, Sub-Committee SC 5, *System integration and communication*.

ISO/IEC 9506 consists of the following parts, under the general title *Industrial automation systems — Manufacturing Message Specification* :

— *Part 1: Service definition*

— *Part 2: Protocol specification*

# Industrial automation systems — Manufacturing Message Specification —

## Part 2:
Protocol specification

## AMENDMENT 1: Data exchange

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**Subclause 7.5.2**

Change

   "additionalService   [78]   AdditionalService-Request"

to

   "additionalService   [78]   AdditionalService-Request,"

Insert the following after "-- choice [79] is reserved":

| | | |
|---|---|---|
| "getDataExchangeAttributes | [80] | GetDataExchangeAttributes-Request, |
| | | -- Shall not appear in minor version 1 |
| exchangeData | [81] | IMPLICIT ExchangeData-Request |
| | | -- Shall not appear in minor version 1" |

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**Subclause 7.5.2**

Change

   "getCapabilityList          [71]   IMPLICIT CS-GetCapabilityList-Request"

to

| | | |
|---|---|---|
| "getCapabilityList | [71] | IMPLICIT CS-GetCapabilityList-Request, |
| getDataExchangeAttributes | [80] | IMPLICIT CS-GetDataExchangeAttributes-Request, |
| | | -- Shall not appear in minor version 1 |
| exchangeData | [81] | IMPLICIT CS-ExchangeData-Request |
| | | -- Shall not appear in minor version 1" |

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**Subclause 7.5.4**

Change

   "additionalService   [78]   AdditionalService-Response"

to

   "additionalService   [78]   AdditionalService-Response,"

Insert the following after "-- choice [79] is reserved":

   "getDataExchangeAttributes   [80]   IMPLICIT GetDataExchangeAttributes-Response,
                                       -- Shall not appear in minor version 1
    exchangeData                 [81]   IMPLICIT ExchangeData-Response
                                       -- Shall not appear in minor version 1"

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**Subclause 7.5.4**

Change

   "getCapabilityList                   [71]   IMPLICIT CS-GetCapabilityList-Response"

to

   "getCapabilityList                   [71]   IMPLICIT CS-GetCapabilityList-Response,"
    getDataExchangeAttributes  [80]   IMPLICIT CS-GetDataExchangeAttributes-Response,
                                       -- Shall not appear in minor version 1
    exchangeData                 [81]   IMPLICIT CS-ExchangeData-Response
                                       -- Shall not appear in minor version 1"

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**Subclause 8.2**

Change

   "cancel (84)"

to

   "cancel                       (84),
    getDataExchangeAttributes  (85),   -- Shall not appear in minor version 1
    exchangeData                 (86),   -- Shall not appear in minor version 1"

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**Subclause 9.4**

Change

   "operatorStation     (11)"

to

   "operatorStation     (11),
   "dataExchange       (12)       -- Shall not appear in minor version 1"

**2**

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**Subclause 9.6**

Change

"operatorStation (11)"

to

"operatorStation (11),
dataExchange (12)      -- Shall not appear in minor version 1"

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**Subclause 17.3**

Item a), change

"7 to 16 and"

to

"7 to 16, 20 and"

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**Subclause 17.8**

In the first sentence of the second paragraph, change

"clauses 6 to 16 and"

to

"clauses 6 to 16, 20 and"

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**Subclause 17.11**

Last line, change

"shall be one"

to

"shall be 2"

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**Subclause 18.3**

Table 2, add the following to the end:

| getDataExchangeAttributes | |
|---|---|
| exchangeData | |

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**Clause 19**

Add the following immediately before the last line:

"CS-GetDataExchangeAttributes-Request : : = NULL

CS-GetDataExchangeAttributes-Response : : = NULL

CS-ExchangeData-Request : : = NULL

CS-ExchangeData-Response : : = NULL"

Add a new clause as follows:

## 20 Data Exchange Protocol

### 20.1 Introduction

This clause describes the protocol required for realization of the services which are defined in Clause 20 of ISO/IEC 9506-1. This includes:

GetDataExchangeAttributes
ExchangeData

### 20.2 ExchangeData

The abstract syntax of the exchangeData choice of the ConfirmedServiceRequest and ConfirmedServiceResponse types is specified below and described in the subclauses which follow. Subclause 5.5 describes the derivation of all parameters for which explicit derivations are not provided in this clause.

```
ExchangeData-Request ::= SEQUENCE {
    dataExchangeName          [0] ObjectName,
    listOfRequestData         [1] IMPLICIT SEQUENCE OF Data }

ExchangeData-Response ::= SEQUENCE {
    listOfResponseData        [0] IMPLICIT SEQUENCE OF Data }
```

#### 20.2.1 ExchangeData-Request

The abstract syntax of the exchangeData choice of the ConfirmedServiceRequest type shall be the ExchangeData-Request.

#### 20.2.2 ExchangeData-Response

The abstract syntax of the exchangeData choice of the ConfirmedServiceResponse type shall be the ExchangeData-Response.

### 20.3 GetDataExchangeAttributes

The abstract syntax of the getDataExchangeAttributes choice of the ConfirmedServiceRequest and ConfirmedServiceResponse types is specified below and described in the subclauses which follow. Subclause 5.5 describes the derivation of all parameters for which explicit derivations are not provided in this clause.

```
GetDataExchangeAttributes-Request ::= ObjectName -- Data Exchange Type Name

GetDataExchangeAttributes-Response ::= SEQUENCE {
    inUse                             [0] IMPLICIT BOOLEAN,
    listOfRequestTypeSpecifications   [1] IMPLICIT SEQUENCE OF TypeSpecification,
    listOfResponseTypeSpecifications  [2] IMPLICIT SEQUENCE OF TypeSpecification,
    programInvocation                 [3] IMPLICIT Identifier OPTIONAL }
```

#### 20.3.1 GetDataExchangeAttributes-Request

The abstract syntax of the getDataExchangeAttributes choice of the ConfirmedServiceRequest type shall be the GetDataExchangeAttributes-Request.

#### 20.3.2 GetDataExchangeAttributes-Response

The abstract syntax of the getDataExchangeAttributes choice of the ConfirmedServiceResponse type shall be the GetDataExchangeAttributes-Response.

##### 20.3.2.1 Program Invocation

The presence of the programInvocation element of the GetDataExchangeAttributes-Response shall indicate that the value of the Linked attribute of the Data Exchange Object is true. If present, the value of this parameter shall convey the name of the Program Invocation referenced by the Program Invocation Reference attribute of the Data Exchange Object.

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**Clause A.1**

Add the following at the end of the page:

"CS-GetDataExchangeAttributes-Request

CS-GetDataExchangeAttributes-Response

CS-ExchangeData-Request

CS-ExchangeData-Response"

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