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BSI Standards Publication

# Intelligent transport systems — Definition of data elements and data frames between roadside modules and signal controllers for cooperative signal control

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# National foreword

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# Intelligent transport systems — Definition of data elements and data frames between roadside modules and signal controllers for cooperative signal control

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# Foreword

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This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

# Introduction

Signal controllers and traffic control centres optimize signal timings based on real-time traffic information for each approach. For example, signal controllers may extend the green time for an approach with a long queue.

The aim of this document is to define data elements and data frames that are useful for optimising local and coordinated signal operations.

ISO 22951 (PRESTO) specifies the message sets for signal system pre-emption and priority for transit vehicles including communications between roadside modules and signal controllers. This document complements PRESTO by defining message sets for traffic information that is useful for optimizing normal signal operations. Thus, signal controllers and traffic management centres can generate signal timings referring to the messages of PRESTO and this document.

The red arrows in Figure 1 illustrate message flows that are within scope of this document.

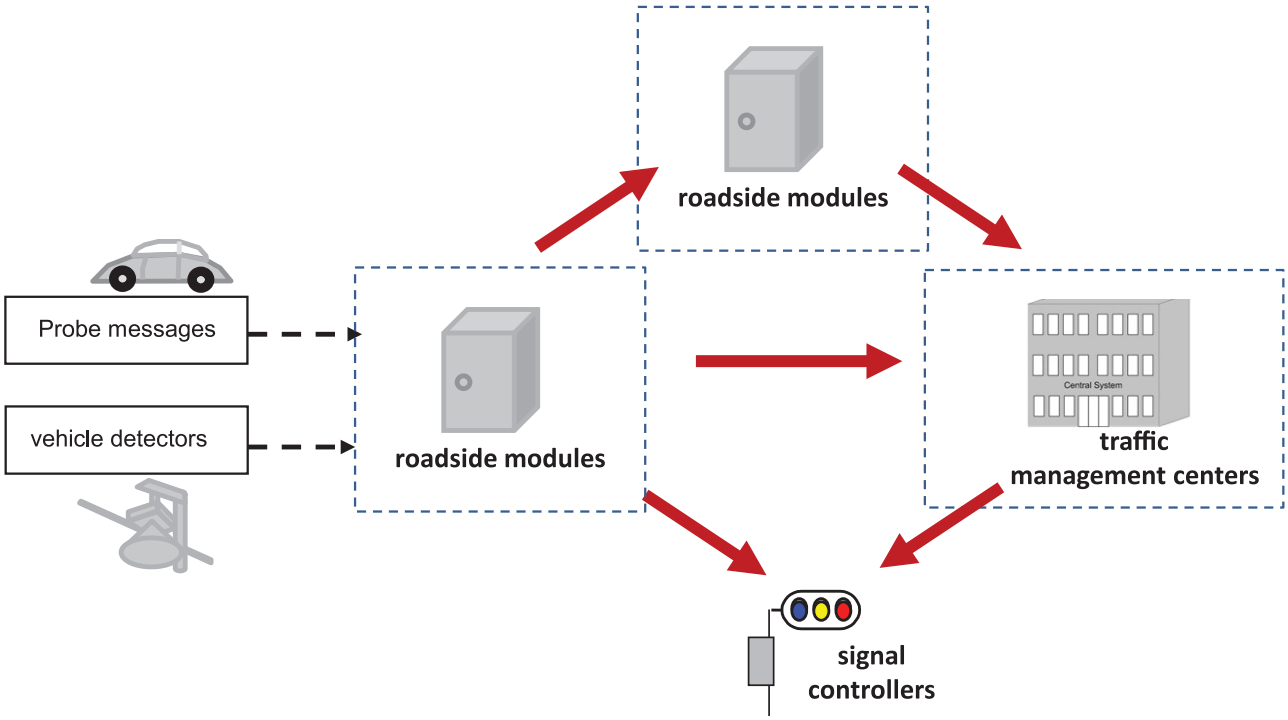


**Figure 1 — Physical scope of this document**

# Intelligent transport systems — Definition of data elements and data frames between roadside modules and signal controllers for cooperative signal control

## 1 Scope

This document specifies data elements and data frames for messages

a) exchanged between roadside modules and:

   1) signal controllers,

   2) traffic management centres, and/or

   3) other roadside modules.

b) exchanged between traffic management centres and signal controllers.

NOTE Roadside modules can generate data based on inputs from vehicle detectors and/or probe data transmitted by vehicles. This document does not address how the roadside module generates the data; it only addresses communication after receiving and processing raw data from one or more sources.

EXAMPLE A roadside module can calculate vehicle volume, average speed, and queue length by utilizing data from vehicle detectors and probe information.

The data structure follows the framework specified in ISO 14817-1, and the data elements and data frames are described by description name, object identifier, definition, and data type following ISO 14817-1. The specifications of this document complement those from ISO/TS 19091 and other standards.

The roadside modules can be constructed in any manner using any architecture including the ITS station as described in ISO 21217, or other hardware and software constructs.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 14817-1, *Intelligent transport systems — ITS central data dictionaries — Part 1: Requirements for ITS data definitions*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 14817-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/