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**Kollektivtrafik – Grundläggande krav och
rekommendationer för system som mäter
kvalitet på tillhandahållna tjänster**

**Public passenger transport – Basic
requirements and recommendations for systems
that measure delivered service quality**

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Postadress: SIS Förlag AB, 118 80 STOCKHOLM
Telefon: 08 - 555 523 10. *Telefax:* 08 - 555 523 11
E-post: sis.sales@sis.se. *Internet:* www.sis.se

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English Version

**Public passenger transport - Basic requirements and
recommendations for systems that measure delivered service
quality**

Transport public de voyageurs - Exigences fondamentales
et recommandations pour les systèmes de mesure de la
qualité réalisée

Öffentlicher Personennahverkehr - Grundlegende
Anforderungen und Empfehlungen für Systeme zur
Messung der erbrachten Dienstleistungsqualität

This European Standard was approved by CEN on 16 March 2006.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN 15140:2006 (E)

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Foreword

This European Standard (EN 15140:2006) has been prepared by Technical Committee CEN/TC 320 "Transport – Logistics and services", the secretariat of which is held by DS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2006, and conflicting national standards shall be withdrawn at the latest by October 2006.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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 United Kingdom.

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Introduction

In accordance with EN 13816, measurement of delivered service quality is part of the service quality loop, where the selection of quality criteria and appropriate measures may both reflect and determine targeted quality. Measurement is a valuable management and motivational tool provided it leads to improvement actions.

The validity of the measurement is affected both by design and conduct. This document is intended to help construct the measurement system and to help understand and reduce the causes of bias that any system of measurement may introduce.

1 Scope

This document provides basic requirements and recommendations for systems that measure delivered service quality of public passenger transport to be applied in the framework of EN 13816.

The requirements and recommendations specified in this document apply both to third party measurements and measurements conducted by the service provider.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 13816:2002, *Transportation – Logistics and services – Public passenger transport – Service quality definition, targeting and measurement*.

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13816:2002 and the following apply.

3.1

continuous measurement

collection of data that takes place all year round

3.2

grid

table used for collecting data and evaluating the various items composing a quality criterion

3.3

indicator

quantitative expression of a quality criterion resulting from a measurement process

3.4

item

measured component of complex quality criterion

3.5

measurement process

set of operations to determine the value of a measured quality criterion

3.6

quality criterion

representation of the customer view of the service provided, as stated in EN 13816:2002 subclause 3.2

3.7

surveyor

person collecting data

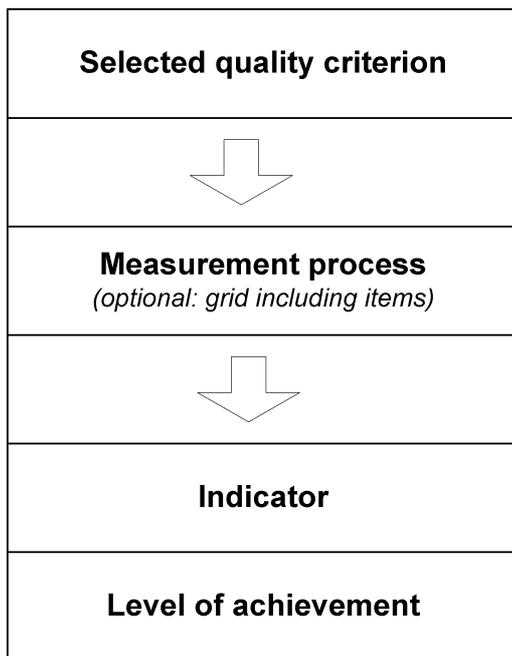


Figure 1 — Diagram illustrating the relationship between the defined terms

4 Requirements

4.1 Requirements applying to all measurement systems

4.1.1 Design of the measurement system

Each quality criterion to be measured shall refer to the list of eight categories given in EN 13816.

The design of the measurement system shall balance the customers viewpoint and the use of the measurement as a management tool for reaching targeted quality (management viewpoint). Some quality criteria may need to be described more precisely in a grid that lists a number of items. In this case, the items in the grid and their weights shall be designed in accordance with the previous requirement. When it is not possible to control/measure what customers perceive, evidence shall be given that, as far as the customer is concerned, specified procedures have been followed.

NOTE e.g. declaration by a driver that he made an announcement to the passengers in a sudden abnormal situation can qualify as evidence.

For each measured quality criterion, there shall be a precise definition of what is "in conformity"/"not in conformity". The delivered quality measured shall be recorded either as "in conformity", or "not in conformity".

As stated in EN 13816:2002 subclause 4.2, the level of achievement shall be expressed, where appropriate, as a ratio of passengers affected.

4.1.2 Conduct of measurement

The measurement of the service quality delivered shall be done during operating hours.

Updated measurement of the chosen quality criteria shall be consolidated and reported at least once a year.

The organisational arrangements for measurement shall be documented and provisions shall be made for inspection and audit.

Changes in the methods and reasons for the changes shall be documented.

The data collection and data processing shall be transparent, traceable and verifiable.

The item measured shall be recorded as first observed even if immediate corrective action takes place.

4.2 Specific requirements according to the type of measurement

4.2.1 General

Measurements can be made by surveyors or by technical means. They can be continuous or by sample (see Table A.1).

4.2.2 Surveyors

The profile, selection and training of the surveyors shall be specified.

Their briefing process and on-site management shall be specified.

4.2.3 Technical measurements

Data collected automatically shall be compared for consistency purposes, at least when the system of data collection is created or modified, with data from other sources of measurement relevant to the same quality criterion.

4.2.4 Continuous measures

It shall be verified that the measure takes place without interruptions that would affect the reliability of the results.

4.2.5 Sampling measures

The size, choice and frequency of the sampling shall consider statistical rules and shall be documented.

It shall be verified that the survey scheme is representative of the type of service in question.

5 Recommendations

5.1 Design of the measurement system

When designing a measurement system, it is recommended to look at best practices implemented in comparable situations.

A measurement system, even simple, can be considered satisfactory if it leads on-field operations to maintain and to increase customer satisfaction.

For benchmarking purposes, the similarities and differences between measurement systems should be taken into account.

The selection of quality criteria to be measured should be made in accordance with results of customer's expectations surveys.

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The number of quality criteria to be measured should be big enough to cover the essential ones but limited by the capacity to manage them. During the initial application phase of this standard, it is recommended to start with a few quality criteria only. Once the measuring method has been mastered, the implementation of the standard can be extended to other quality criteria, thus uniformly increasing the measurement parameters for the purposes of continuous improvement. When measuring quality, it is recommended to respect the principles of statistical reliability so as to know if the results and their evolution over time are significant or not.

For some quality criteria, targeted quality may vary in different situations. In this case, it is suggested to define different measurement processes and indicators corresponding to these situations and to measure accordingly.

The measurement processes and the indicators can refer to any part of the service (e.g. route, route clusters, service points) or be global on the network.

If a quality criterion is measured by using a grid, it is recommended to validate the items and their relative weight by means of an enquiry among the customers, and the number of items should be limited to the most important items for the customers.

The design of measurement processes depends on the means and equipment used for the measurements.

The statement of service standard can be based on customer expectation and/or on the comparison between satisfaction surveys and delivered quality of the existing service.

It is recommended to use the ratio of customers as much as possible to express the results, thus allowing the management to give priorities to its actions leading to quality improvement.

If the number of customers is not measured, it is recommended to use a justified and appropriate estimation.

When quality indicators are used in a contractual relationship between a transport authority and an operator, the measurement processes should be understood and agreed on by the contractual partners.

The allocation of responsibility should be clearly defined in the contract. Causes considered as external could be excluded in the expression of the contractual level of achievement.

In the case of measurements conducted by surveyors, it is recommended, at least from time to time, to take measurements in the presence of the contractual partners.

It should be verified that the evolution of indicators matches customer satisfaction enquiry trends.

5.2 Conduct of measurement

The methodology underlying the measurement system should be as stable as possible, so as to allow comparisons (for instance between different periods). When changing the methods of measurement, the results should be predicted and evaluated.

In the case of measurement conducted by surveyors, to help them measure as consistently as possible, it is recommended to provide them with guidelines giving examples, if necessary with pictures.

It is recommended to audit the measurement system regularly and to audit the data collection and data processing system at least once a year.

A balance should be found between the precision required and the costs, since the measurements can be expensive (for instance, size of the samples or measurement of the number of passengers).

Costs can be optimised by performing several kinds of measurements at the same time (e.g. a surveyor can measure information and cleanliness at the same time).

Costs can be optimised by using the same measurements to meet several needs (e.g. for management purposes and reporting to authorities).

It is recommended to use measurement as a first step to initiate immediate corrective action, especially if an unacceptable performance has been detected.