



SLOVENSKI STANDARD
SIST EN 14534:2004+A1:2007

01-maj-2007

DcýHbY'głrcf]Hj Y!'?U_cj cghlgłrcf]HjYj '!A Yf^yb^Y' UgUdfYbcgUcX'gdfY^Ya UXc
j fc]Hj Y'nUa Ugcj bc`dcýłc

Postal services - Quality of service - Measurement of the transit time of end-to-end services for bulk mail

Postalische Dienstleistungen - Dienstqualität - Laufzeitmessung 'end-to-end' für Massensendungen

Services postaux - Qualité de service - Mesure de la qualité de service de bout en bout pour courrier en nombre

iTeh STANDARD PREVIEW
(standards.iteh.ai)
<https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfc8a/sist-en-14534-2004a1-2007>

Ta slovenski standard je istoveten z: EN 14534:2003+A1:2007

ICS:

03.240 Poštne storitve Postal services

SIST EN 14534:2004+A1:2007 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 14534:2004+A1:2007

<https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfe8a/sist-en-14534-2004a1-2007>

English Version

Postal services - Quality of service - Measurement of the transit
time of end-to-end services for bulk mail

Services postaux - Qualité de service - Mesure de la qualité
de service de bout en bout pour courrier en nombre

Postalische Dienstleistungen - Dienstqualität -
Laufzeitmessung 'end-to-end' für Massensendungen

This European Standard was approved by CEN on 23 May 2003 and includes Amendment 1 approved by CEN on 4 February 2007.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.

[SIST EN 14534:2004+A1:2007](https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfe8a/sist-en-14534-2004a1-2007)

<https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfe8a/sist-en-14534-2004a1-2007>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Contents

Foreword	3
Introduction	4
1 Scope	5
2 Normative references	6
3 Terms and definitions	7
4 Performance indicators	14
4.1 General	14
4.2 Calculation and presentation of on-time performance	14
5 Methodology	16
5.1 Representative test mail methodology	16
5.2 Creation of test mail.....	16
5.3 Establishing the date of deposit	17
5.4 Sample design.....	18
5.5 Real mail studies	18
5.6 Geographical stratification.....	18
5.7 Geographical distribution of the receiving panel.....	20
5.8 Distribution of senders.....	20
5.9 Estimators.....	22
5.10 Aggregation of results.....	23
6 Test mail characteristics	24
6.1 General	24
6.2 Discriminant mail characteristics	24
7 Report	25
8 Quality control and auditing	26
Annex A (normative) Calculation of the variance of the estimator of the on-time probability	27
Annex B (normative) Calculation rule	42
Annex C (normative) Quality control and auditing	49
Annex D (informative) Real mail studies	53
Annex E (informative) Validation rules for test items	55
Annex F (informative) Additional reporting	56
Annex G (normative) Relaxation related to changed requirements due to flows with smaller mail volumes in an enlarged EU	58
Bibliography	64

Foreword

This document (EN 14534:2003+A1:2007) has been prepared by Technical Committee CEN/TC 331, "Postal services", the secretariat of which is held by NEN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2007 and conflicting national standards shall be withdrawn at the latest by September 2007.

This document includes Amendment 1, approved by CEN on 2007-02-04.

This document supersedes EN 14534:2003.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 and A1.

This bulk mail standard has been developed from the requirements of EN 13850 *Postal services - Quality of service - Measurement of the transit time of end-to-end services for single piece priority mail and first class mail*. Both European Standards consider methods using a representative end-to-end sample of all types of addressed letter mail appropriate for their coverage. A separate standard is required for the measurement of bulk mail for the following reasons.

- **Contract Services:** mail posted in bulk will often be mailed under a contract between the sender and the postal operator. Typically bulk services require customers to undertake a level of pre-sortation or to present mail in different ways according to the contract conditions.
- **Senders:** members of the public posting single items are replaced by companies, small in number, posting large volumes of mail; third party agents may also act on behalf of posting customers.
- **Volumes of mailings:** bulk mailings may contain thousands or millions of items.
- **Performance Measures:** on-time performance measures are expanded to provide additionally on, by or between specific dates performance depending on what is agreed with the customers or is specified for this service.
- **Discriminant Characteristics:** the range of characteristics varies by type of mail service and a wider set of potential characteristics should be considered.
- **Dates of deposit:** the rules and requirements for bulk mails are more complex and may be specific to the contract between customer and postal operator.

Test items: have to match the characteristics of customer mailings and where database seeding methods are used 'live' items of mail may be used in the survey. This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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

Introduction

In the Green paper on postal services in 1992 the European Commission emphasised the need to establish common rules for the development of community postal services and the improvement of quality of service. The Commission identified requirements for quality of service measurement that include:

- independent end-to-end measurement capabilities;
- a focus on cross-border delivery service performance;
- a single, uniform and reliable system for monitoring delivery service performance within the Union.

The Commission acknowledged that the different postal traditions and cultures in Europe would not allow for the establishment of one common unified European measurement system and that national systems should have sufficient degrees of freedom to reflect national needs and peculiarities. On the other hand, they should fulfil a defined set of minimum requirements to satisfy the information interests of the national regulatory authority and postal customers and postal operators themselves.

The objective of the measurement is to estimate the quality of service given to the customer in each European country domestically and cross-border between European countries.

This European Standard refers to a number of principles and minimum requirements to be applied for the measurement of the transit time of national and cross-border mail.

A1 When EN 14534 was developed it was decided to base it on existing measuring systems already in use among the European Union member states. Since the publication of EN 14534 in 2003 more countries have joined the European Union which have increased the number of cross-border mail flows significantly and therefore made it necessary to adapt the standard accordingly.

Amendment 1 to this European Standard has been developed to make it possible to economically measure a larger number of mail flows from a wider range of countries than the original versions of the standard was made for.

Amendment 1 to this European Standard gives information on how to categorize mail flows for measuring purposes and explain how required accuracy for small and medium sized mail flows can be obtained by measuring under a consecutive number of years. **A1**

1 Scope

This European Standard specifies methods for measuring the end-to-end transit time of the domestic and cross-border, priority and non-priority, bulk mail, collected, processed and distributed by postal service operators. It considers methods using a representative end-to-end sample of addressed bulk mail. End-to-end is defined as from the point mail is placed into the collection/acceptance system under the responsibility of the postal operators, to the final delivery point under the responsibility of the postal operators.

For the purpose of this European Standard, bulk mail can include all types of addressed bulk mail: letter mail, direct mail, magazines, and newspapers, unless otherwise indicated.

The overall quality of service result should be expressed as the percentage of mail delivered within $J + n$ days end-to-end according to the EC postal directive or the percentage of mail delivered by, on or between expected dates. The measurement should be in whole days and not be restricted by reference to a specific time of day for delivery.

This quality of service indicator does not measure the postal operator's overall performance in a way which provides direct comparison of postal service operators, and does not include other service performance indicators than those related to transit time. In particular this European Standard does not measure whether the timing of collections meets customers' requirements.

The European Standard can be used to assess the performance of postal operators for specific products or services at a national level or for an individual or a group of customers.

The European Standard should not be used to assess the overall performance of a group of products or services which have other service specifications in terms of transit time expectation.

It specifies a set of requirements for the design of a quality of service measurement system for bulk mail, involving the selection and distribution of test mail sent and received by selected panellists. The test mail sample design gives the specifications for the mail to be representative of real mail flows.

This European Standard relates to the measurement of services offered to businesses that have pick ups at their offices or give their mail to postal service operators. If a third party agent acts for the postal operator then the time the mail is handed over to the agent should form part of the measurement. Where a third party agent acts for the sending customer then the measurement should be from the point when mail is handed over to the postal operator.

For technical reasons the European Standard may not in all parts be suitable for the measuring of very small volumes of mail and for operators with limited coverage. It is not applicable for measuring the end-to-end transit time distribution of single piece mailings which require different measurement systems. The European Standard EN 13850 has been developed for single piece priority mail and EN 14508 for single piece non-priority mail.

This European standard includes specifications for the quality control and auditing of the measurement system.

In certain circumstances this European Standard allows a choice between alternatives or deviations to be made subject to the approval of the regulator. This approval is only necessary if the product or service is within the universal service obligation.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 13850		<i>Postal services - Quality of service - Measurement of the transit time of end-to-end services for single piece priority mail and first class mail.</i>
EN 30011-1		<i>Guidelines for auditing quality systems - Part 1: Auditing (ISO 10011-1:1990).</i>
EN ISO 9000	2000	<i>Quality management systems - Fundamentals and vocabulary (ISO 9000:2000).</i>
ISO 3534-1	1993	<i>Statistics - Vocabulary and symbols - Part 1: Probability and general statistical terms.</i>
ISO 3534-2	1993	<i>Statistics - Vocabulary and symbols - Part 2: Statistical quality control.</i>

 deleted text 

International Chamber of Commerce / ESOMAR International Code of Marketing and Social Research Practice¹

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 14534:2004+A1:2007](https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfe8a/sist-en-14534-2004a1-2007)
<https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfe8a/sist-en-14534-2004a1-2007>

¹ The International Chamber of Commerce / ESOMAR International Code of Marketing and Social Research Practice is available from:

ESOMAR:
Vondelstraat 172
1054 GV AMSTERDAM
The Netherlands
Tel: +31-20-664 21 41
Fax: +31-20-664 29 22
www.esomar.org

or

The International Chamber of Commerce:
www.iccwbo.org

3 Terms and definitions

For the purposes of this European Standard the following terms and definitions apply.

3.1

accuracy

closeness of agreement between a test result and the accepted reference value

NOTE 1 The term accuracy, when applied to a set of test results, involves a combination of random components and a common systematic error or bias component. [ISO 3534-1:1993]

NOTE 2 In this standard the accuracy is given by the length 2ε of the confidence interval at the confidence level 95 % for the parameter being estimated, namely the probability of attaining the specification with respect to the transit time.

3.2

aggregation

compounding of primary data into an aggregate for the purpose of expressing them in a summary form

3.3

audit

systematic and independent examination to determine whether activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives

[EN ISO 9000:2000]

iTeh STANDARD PREVIEW
(standards.iteh.ai)

3.4

average (arithmetic mean)

sum of values divided by the number of values [ISO 3534-1:1993]

[SIST EN 14534:2004+A1:2007](https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfe8a/sist-en-14534-2004a1-2007)

3.5

bring service

mail collection or mail delivery service specifically contracted by the customer

<https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfe8a/sist-en-14534-2004a1-2007>

3.6

bulk mail

large volume of mail having similar characteristics posted by a single sender at the same induction point

NOTE Customers typically share the outward processing of bulk mail by sorting or segregating the mail to enable the postal operator to by-pass the first sortation stages.

Cf **sender**

3.7

business

bodies other than households that receive and send mail

3.8

characteristic

property which helps to identify or differentiate between items of a given population

NOTE 1 The characteristics can be either quantitative - by variables, or qualitative - by attributes [ISO 3534-1:1993]

NOTE 2 In this European Standard the population is postal test items and the characteristics are related to type of senders, type of receivers, times and types of induction or delivery, physical aspects of test items, franking, etc.

3.9

city

geographically defined area according to national classification systems

3.10

conformity

fulfilment of specified requirements [EN ISO 9000:2000]

3.11

corrective action

action taken to eliminate the causes of an existing non-conformity, defect or other undesirable situation in order to prevent recurrence [EN ISO 9000:2000]

3.12

correlation

relationship between two or several random variables within a distribution of two or more random variables

NOTE Most statistical measures of correlation measure only the degree of linear relationship. [ISO 3534-1:1993]

3.13

correlation coefficient

ratio of the covariance of two random variables to the product of their standard deviations [ISO 3534-1:1993]

3.14

country

territory of a nation with its own government

3.15

cross-border mail

mail distributed from one country to another country

3.16

customer

natural or legal person having a business relationship with a postal operator

3.17

date of delivery

date on which a postal item is delivered to the address or to the addressee

3.18

date of deposit (J)

date on which a postal item is posted, provided posting takes place before the last collection of that day

NOTE 1 The term date of deposit is used in relation to quality of service measurement. The definition is based on the Postal Directive 97/67/EC.

NOTE 2 Last collection refers to the advertised last time for collection (not the actual time) or to the contracted latest time for collection.

NOTE 3 If a postal item is posted after the last collection for that day's mail then the date of deposit is the next date on which there is a collection for that type of mail .

3.19

date of posting

calendar date on which a postal item is posted

3.20

delivery point

physical location at which delivery of postal items by a postal operator takes place and where they leave the operator's responsibility

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 14534:2003+A1:2007
<https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfe8a/sist-en-14534-2004a1-2007>

3.21**design factor**

ratio of the variance of the estimator in the given sample design by the variance of the estimator in an elementary sample design of the same size. The design factor is related to a given sample design and estimator.

3.22**discriminant (characteristic)**

characteristic affecting the outcome

NOTE In this standard a characteristic is discriminant when transit time differs according to the different modes of the characteristic.

3.23**distribution**

process from collecting mail at collecting points through sorting at the distribution centre to delivery of mail items to the addressee

3.24**domestic mail**

mail items sent and received within one country

3.25**end-to-end (transit time)**

from the point mail is placed into the collection/acceptance system under the responsibility of the collecting postal operator to the final delivery point under the responsibility of the delivering postal operator

3.26**estimate**

value of an estimator obtained as a result of an estimation [ISO 3534-1:1993]

[SIST EN 14534:2004+A1:2007](https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfe8a/sist-en-14534-2004a1-2007)

3.27**estimator**

statistic used to estimate a population parameter [ISO 3534-1:1993]

<https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfe8a/sist-en-14534-2004a1-2007>

NOTE In this European Standard, a function of the observed values of test item transit times allowing the estimation of the probability of attaining the specification with respect to the transit time.

3.28**expectation**

for a discrete random variable X taking the values x_i , with the probabilities p_i , the expectation if it exists, is:

$$\mu = E(X) = \sum p_i x_i$$

the sum being extended over all the values x_i which can be taken by X [ISO 3534-1:1993]

3.29**field of study**

total mail flow of one product and service between defined postal areas as:

- Domestic - one operator in one country
- Domestic - one operator in one country for an individual or a group of customers
- Domestic - a group of operators in one country
- Cross-border - one operator to one country
- Cross-border - one operator to a group of countries
- Cross-border - one country to one country

— Cross-border - one country to a group of countries

3.30

frequency

number of occurrences of a given type of event or the number of observations falling into a special class [ISO 3534-1:1993]

3.31

geographical coverage

spread of postal services within a pre-defined geographical area

3.32

independent performance monitoring organisation

body charged with the monitoring of the quality of service according to the methodology specified in this standard and which body is external to, and having no links of ownership or control with the postal service provider or customers thus monitored

3.33

independence

two random variables are independent if their distribution functions are related by

$$F(x,y) = F(x,\infty) \cdot F(\infty,y) = G(x) \cdot H(y)$$

where $F(x,\infty) = G(x)$ and $F(\infty,y) = H(y)$ are the marginal distribution functions of X and Y, respectively for all pairs (x, y) [ISO 3534-1:1993]

iteh STANDARD PREVIEW
(standards.iteh.ai)

3.34

induction

deposition of mail into the postal network

[SIST EN 14534:2004+A1:2007](#)

<https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfe8a/sist-en-14534-2004a1-2007>

3.35

induction point

physical location at which postal items are placed into the collection/acceptance system under the responsibility of the collecting postal operator

3.36

inspection

activity such as measuring, examining, testing or gauging one or more characteristics of an entity and comparing the results with specified requirements in order to establish whether conformity is achieved for each characteristic [EN ISO 9000:2000 and ISO 3534-2:1993]

3.37

metered mail

mail franked by franking machines

3.38

national and regional holiday

day with limited postal collection or delivery activities

3.39

observed value

value of a characteristic obtained as the result of a single observation [ISO 3534-1:1993]

3.40

office of exchange

place where a postal operator accepts cross-border mail from a postal operator of another country

3.41**on-time probability**

probability of the event that the transit time T of a mail item meets the specifications, i.e. does not exceed the specified number s of days:

$$\Pr(T \leq s)$$

3.42**on-time performance**

proportion of postal items within a given period of time t with transit times meeting the specification

Formal definition: $\frac{1}{N(t)} \sum_{i=1}^{N(t)} X_i$ where $N(t)$ is the total number of postal items inducted during the period,

and $X_i = 1$ if postal items i fulfils the specification and otherwise $X_i = 0$

3.43**performance indicator**

expression derived from postal transit time statistics and data used to characterise the performance of a postal operator

3.44**postal catchment area**

postal area served by a domestic sorting centre or by an office of exchange for cross-border mail outbound or inbound. Catchment areas can be different for outbound and inbound mail, or for different fields of study

3.45**postal area**

one of the parts into which a postal operator's whole territory is divided and which is suitable for characterising postal delivery peculiarities

3.46**postal service**

services involving the clearance, sorting, transport and delivery of postal items

3.47**priority item, first class item, A-class item**

letter post item sent with priority by air or by surface and receiving different processing compared to items classified as non-priority

3.48**probability distribution**

function giving the probability that a random variable takes any given value or belongs to a given set of values [ISO 3534-1:1993]

3.49**quality**

totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs [EN ISO 9000:2000]

3.50**quality assurance**

all the planned and systematic activities implemented within the quality system and demonstrated as needed, to provide adequate confidence that an entity will fulfil requirements for quality [EN ISO 9000:2000]

3.51**quality control**

operational techniques and activities that are used to fulfil requirements for quality [EN ISO 9000:2000 and ISO 3534-2:1993]

3.52

quality evaluation

systematic examination of the extent to which an entity is capable of fulfilling specified requirements [EN ISO 9000:2000]

3.53

random sample

sample of n items taken from a population of N items in such a way that each item in the population has a strictly positive probability of being selected

3.54

random variable

variable that may take any of the values of a specific set of values and with which is associated a probability distribution [ISO 3534-1:1993]

3.55

real mail

postal items sent by customers

3.56

real mail flow

number and types of postal items distributed end-to-end by postal operators

3.57

real mail study

studies on real mail flows or real mail characteristics

3.58

rural

cities and communes with less than a specified number of inhabitants

3.59

sample

one or more sampling units taken from a population and intended to provide information on the population [ISO 3534-1:1993]

3.60

sender

business sending bulk mail

NOTE The sender can be a consolidator or a mailing house

3.61

service standard

standard that specifies requirements to be fulfilled by a service, to establish its fitness for purpose

3.62

single piece mail

postal items posted and processed individually

3.63

sorting centre

place where the main sorting of mail is done

3.64

stamped mail

postal items paid for with postage stamps

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 14534:2003+A1:2007
<https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfe8a/sist-en-14534-2004a1-2007>

3.65**standard**

document, established by consensus and approved by a recognised body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context

NOTE Standards should be based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefits [EN 45020].

3.66**stratification**

division of a population into mutually exclusive and exhaustive sub-populations (called strata) which are thought to be more homogeneous with respect to the characteristics investigated than the total population [ISO 3534-1:1993]

3.67**study domain**

sub-populations for which separate results can be appropriate

NOTE Study domains could be defined for example by geographic segmentation or by sub-product

3.68**test item**

postal item produced in the test measurement system for the purpose of measuring real mail performance. Test items should be representative of real mail. Test items can be either pre-fabricated by the survey operator specifically for the test measurement system or generated by a customer using an address list provided by the survey operator.

3.69**test period**

period of time under which measurement has been carried out and for which the results are presented in a separate test report

<https://standards.iteh.ai/catalog/standards/sist/a22847e0-03d1-4ce5-a923-e4e20c8bfe8a/sist-en-14534-2004a1-2007>

3.70**time of delivery**

time when a postal item is delivered at its delivery point

3.71**transit time**

number of days elapsed between induction and delivery of mail item as calculated in 4.2.3

3.72**transit time distribution**

transit time of a mail item is random and therefore it is modelled as a random variable; the set of probabilities of any event concerning the random variable transit time of a mail item forms its probability distribution

3.73**urban**

cities, including their outskirts, with not less than a specified number of inhabitants

3.74**variance**

measure of dispersion, which is the sum of the squared deviations of observations from their average divided by one less than the number of observations [ISO 3534-1:1993]

3.75**weight**

value to compensate for the difference between the distribution of characteristics in the survey compared to real mail