



Code Service in Social and Health Care

Process description of the THL Code Service

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Terveyden ja hyvinvoinnin laitos

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Foreword

The modelling of the code service processes and information management of the National Institute for Health and Welfare (THL) as specified in this publication was initiated to describe the processing of the new code sets and the activities of the expert groups in order to better meet the needs and expectations of the Code Service customers. This is the first modelling of a customer-oriented code service process, and we illustrate the life cycle model of the code products and the expert group activities associated with their maintenance. We also discuss the quality steering and monitoring of Information Department internal activities associated with the code service processes as well as the development of the internal activities.

The purpose of this publication is to improve customer service by creating minimum criteria for the various process phases as part of the code set preparation and updating protocols. The criteria will contribute to the transparency and uniformity of the Code Service functions. The publication was preceded by the *Code Service Handbook (Koodistopalvelun käsikirja*, in Finnish only), which is available at the Code Service website. This publication will replace the sections discussing the preparation of code sets and classifications in the *Code Service Handbook*. This publication will serve as a guidebook for all the users and interest groups of the THL Code Service. It is also part of the public enterprise architecture development in social and health care.

We prepared this publication at the Information Structures and Classifications Unit (TILU) at THL. In June 2012, we organised a kick-off meeting with Erja Ailio, Jarmo Kärki and Tiina Palotie-Heino, all from TILU, Heikki Virkkunen from the Unit for the Operational Management of Health and Welfare Information and Hanna Rautiainen from the Services Data Resources Unit. At the kick-off meeting, we used the brainstorm model to outline the contents of the project and define its targets. In August 2012, we organised a follow-up meeting to present the first drafts for the code service process and information management forms. In addition to the members of the first meeting, the second meeting also included more representatives from the Code Service and Mikko Huovila from the public enterprise architecture development. After the follow-up meeting, we specified the models and introduced them to the Code Service team, the code set technical expert group, the public enterprise architecture development group as well as the Management Groups of the Information Department and the Code Service. Based on the valuable feedback gained from all mentioned above, we were able to further develop this publication. We wish to thank everyone for their comments and suggestions as well as the test readers for their valuable feedback.

Helsinki, June 2013

Authors

Tiivistelmä

Päivi Mäkelä-Bengs ja Riikka Vuokko. Sosiaali- ja terveydenhuollon koodistopalvelutoiminta. THL:n Koodistopalvelun prosessikuvaus. Terveyden ja hyvinvoinnin laitos (THL). Ohjaus 19/2013. 55 sivua. Helsinki 2013. 978-952-302-041-2 (painettu); 978-952-302-042-9 (verkkojulkaisu).

Terveyden ja hyvinvoinnin laitos (THL) ylläpitää valtakunnallista Koodistopalvelua. Koodistopalvelun tehtävänä on ylläpitää ja jakaa sosiaali- ja terveydenhuollon asiakastietojärjestelmissä käytettäviä valtakunnallisia koodistoja, luokituksia, termistöjä ja muita tietosisältöjä.

Tässä julkaisussa kuvataan julkishallinnon kokonaisarkkitehtuurityön periaatteiden mukaisesti Koodistopalvelun tehtävä ja toimintaperiaatteet elinkaarimallin avulla. Koodistopalvelun tehtävän ja toimintamallin esittely sisältää toimintaympäristön, ydintehtävien sekä Koodistopalvelun sisällön kuvaukset. Koodistopalveluprosessi kuvataan kahdesta näkökulmasta, jotka ovat koodistojen valmistelu ja julkaistujen koodistojen päivitys. Koodistopalveluprosessissa THL:n asiantuntijaryhmillä on merkittävä rooli koodistojen sisällöllisen oikeellisuuden ja laadun sekä käytettävyyden varmistuksessa, minkä vuoksi myös asiantuntijatyön toimintaperiaatteita ja -prosessia esitellään julkaisussa.

Prosessikuvausten lisäksi julkaisussa kuvataan koodistopalveluprosessin ohjausta ja laadunvarmistusta. Tähän liittyy myös THL:ssa tehtävän koodistojen hyväksymiskäsittelyn esittely virkamiestyön näkökulmasta.

Julkaisussa on kuvattu Koodistopalvelun kehittämistavoitteita, kuten koodistojen valmistelun kiireellisyysluokitusta, koodistojen ja asiantuntijaryhmien kuvailutietojen systemaattista keräämistä, koodistoihin liittyvän tiedonhallinnan suunnittelua ja asiakaspalautteen tehokkaampaa keräämistä ja käsittelyä. Julkaisuun on lisäksi koottu joukko koodistopalvelutoiminnan kehittämistarpeita.

Avainsanat: Sosiaalihuolto, terveydenhuolto, valtakunnallinen sähköinen palvelu, koodistopalvelu, koodisto, luokitus, lomakerakenne, tietosisältö, prosessi, prosessikehittäminen, prosessimittarit, laatumittarit, tiedonhallinta, elinkaari, kokonaisarkkitehtuuri.

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Sammandrag

Päivi Mäkelä-Bengs och Riikka Vuokko. Sosiaali- ja terveydenhuollon koodistopalvelutoiminta. THL:n Koodistopalvelun prosessikuvaus [Social-, hälso- och sjukvårdens kodtjänstverksamhet. Processbeskrivning gällande THL:s Kodtjänst]. Institutet för hälsa och välfärd (THL). Ohjaus [Hanledning] 19/2013. 55 sidor. Helsingfors 2013. ISBN 978-952-302-041-2 (tryckt); ISBN 978-952-302-042-9 (nätpublikation).

Institutet för hälsa och välfärd (THL) upprätthåller den riksomfattande Kodtjänsten, vars uppgift är att administrera och distribuera koder, klassificeringar, termer och uppgifter som används i social- och hälsovårdens system för klientinformation.

Med hjälp av livscykelmodellen beskrivs i denna publikation Kodtjänstens uppgifter och verksamhet enligt principerna i den offentliga förvaltningens helhetsarkitektur. Presentationen av Kodtjänstens uppgifter och verksamhetsmodell omfattar beskrivningar av innehållet i kärnuppgifterna och Kodtjänsten samt en beskrivning av verksamhetsområde. Kodtjänstprocessen beskrivs med avseende på utarbetandet av nya koder och uppdateringen av befintliga koder. Eftersom THL:s expertgrupp spelar en viktig roll vid säkrandet av riktigheten hos innehållet i koderna och av kodernas kvalitet och användbarhet presenteras gruppens verksamhetsprinciper och -processer i publikationen.

Utöver processbeskrivningen innehåller publikationen en beskrivning av styrningen och kvalitetssäkringen av kodtjänstprocessen och en beskrivning av kodgodkännandet vid THL ur tjänstemannasyvinkel.

I publikationen beskrivs utvecklingsmålen för Kodtjänsten, vilka bland annat är klassificeringen av angelägenhetsordningen för kodberedningen den systematiska insamlingen av kodbeskrivningar och beskrivningar av expertgruppernas funktion, planeringen av den kodrelaterade databehandlingen samt insamlingen och behandlingen av kundernas feedback. Publikationen behandlar även vissa utvecklingsbehov inom kodtjänstverksamheten.

Nyckelord: Socialvård, hälso- och sjukvård, riksomfattande elektronisk tjänst, kodtjänst, koder, klassifikation, blankettstruktur, uppgiftsinnehåll, process, processutveckling, processmätare, kvalitetsmätare, helhetsarkitektur, informations behandling, livscykel.

Abstract

Päivi Mäkelä-Bengs and Riikka Vuokko. Sosiaali- ja terveydenhuollon koodistopalvelutoiminta. THL:n Koodistopalvelun prosessikuvaus. [Code Service in social and health care. Process description of the THL Code Service]. National Institute for Health and Welfare (THL). Ohjaus [Directions] 19/2013. 55 pages. Helsinki, Finland 2013. ISBN 978-952-302-041-2 (printed); ISBN 978-952-302-042-9 (online publication).

The National Institute for Health and Welfare (THL) maintains the national Code Service. The purpose of the Code Service is to maintain and distribute the national code sets, classifications, terms and other datasets used in social and health care client information systems.

This publication describes the tasks and operating principles of the Code Service using the life cycle model, in compliance with the public administration architecture development. The description of the purpose and operations model of the Code Service includes modelling the operational environment and the content and core activities of the Code Service. The code service process is described from two perspectives: code set preparation and updating published code sets and data structures. Expert groups of the National Institute for Health and Welfare play a key role in the code service process in ensuring the correctness, quality and availability of code set content, and therefore also the operating principles and process of the work of the experts are described in the publication.

In addition to process descriptions, the publication describes the steering and quality assurance of the code service process. This includes a presentation of the approval procedure for code sets at the National Institute for Health and Welfare from the officials' point of view.

The publication describes the development goals for the Code Service, such as assigning an urgency rating for code set preparation, systematically compiling descriptions of code sets and expert groups, planning information management concerning code sets, and more efficient collecting and processing of client feedback. Lastly, the publication lists a number of development needs in the Code Service and in the THL.

Keywords: Social welfare, health care, eHealth services, national electronic service, code service, code, code set, classification, form, data structure, coded content specification, process, process development, process indicators, quality indicators, data management, life cycle, public enterprise architecture.

Terminology

Term	Description	Source
CDA	Clinical Document Architecture, the structure of a clinical document specified by HL7. CDA is an XML-based markup standard.	Health Level Seven (HL7)
Classification	To organise things and phenomena into groups (classes) so that these groups differ from one another in certain qualities. Classification usually results in a hierarchical concept system.	(This publication)
Code	A code is an object corresponding to a certain concept, the attributes of which include the code's ID, name, description and code set reference in the code server format.	(This publication)
Code product	Any code set, classification, terminology, form structure, equivalency table or coded content specifications and related guidelines, specification documents or other publications published on the code server.	(This publication)
Code server	All code sets accepted in the code service process will be published on the code server. The code sets are available on the code server as part of THL's statutory operation. The Social Insurance Institution of Finland (Kela) is responsible for the technical maintenance of the code server.	(This publication)
Code server format	An MS Excel spreadsheet that contains the header fields required of the code structure in question.	(This publication)
Code Service	The Code Service maintains the nationally uniform code sets used in electronic patient records and social welfare customer information systems. The Code Service is part of the National Archive of Health Information (KanTa). The Code Service ensures the quality, development and maintenance of coded contents used in social and health care.	Eerola et al, 2013
Code Service expert group	A group of social and health care experts established by an official decision that participates in the maintenance of code sets. The members include THL's customers and interest group representatives.	(This publication)
Code Service Management Group	A cooperation body set by THL with members from expert and interest groups. The group steers and coordinates Code Service operation and processes and accepts code sets for the code server. The group also comments on the development issues of Code Service operation.	Eerola et al, 2013
Code Service Publishing Group	Also called the Quality Group, the Publishing Group discusses new code sets with regard to technology, contents and terminology after the Code Service Management Group's acceptance. The Publishing Group also discusses the updates of published code sets.	Eerola et al, 2013
Code set	A code set is a collection of codes prepared for a certain purpose that consists of individual specified codes and metadata on the code set. Code sets are essential data structures in social and health care. In this publication, code sets refer to those published on the code server – that is classifications, terminologies, form structures, equivalency tables and coded content specifications.	(This publication)
Code set in preparation	A code set accepted in the first processing of the Code Service Management Group and being prepared by a responsible team and processed by expert groups.	(This publication)
Code set proposal	A well-grounded, written proposal for a new national code set made to the Code Service Management Group by an organisation or person. Proposals are discussed at the group's first processing on the basis of necessity criterion. If the Management Group finds that the necessity criteria are met, the code set will be accepted for preparation.	Eerola et al, 2013

Code set to be published	A code set approved for publication by the Code Service Management Group.	(This publication)
Coded content specification	One of the code server formats. Coded content specification currently refers to the subject matter defined for the Health Information Management Service and published on the code server.	(This publication)
First processing	The processing of the code set proposal by the Code Service Management Group. On the basis of the first processing, a code set can be accepted for preparation.	(This publication)
Form structure	The specification of the code set content as a form and the metadata necessary to produce the form template that guides the data system to print the form in question as a document.	(This publication)
Interoperability	A feature of information systems and processes to ensure that data can be transferred and shared without problems.	(This publication)
Metadata	Metadata identifies and describes data with an agreed description method. E.g. ID, producer and date of publication or version are metadata.	(This publication)
Necessity criteria	Agreed minimum requirements for accepting a code set proposal for preparation.	(This publication)
OID	An internationally defined number sequence to uniquely identify an object. The ISO Object Identifier has been defined in an ISO standard ¹ .	(This publication)
Process	A series of actions that produce a certain outcome. It is started by an incentive and leads to an outcome.	Vuokko et al, 2011
Public enterprise architecture (EA)	A structure formed by the whole of activities, processes and services, information, information systems and the services they produce. It provides a comprehensive approach to the management and development of an organisation's operation and structures.	JHS 179, The advisory Committee on Information Management in Public Administration (JUHTA)
Second processing	The approval procedure of the code set by the Code Service Management Group. As a result, the code set is approved for publication.	(This publication)
Semantic interoperability	Information system feature that ensures that the data content remains unchanged and intact when data is transferred between various systems.	Virkkunen et al, 2013
Structured format	A format of a CDA document where data is coded or in XML format that the information system understands.	Vuokko et al, 2011
Terminology	A list of words that contains terminological information. A term is a name used for a particular thing in a certain field. A term can be a word, a part of a word or a compound word.	The Finnish Terminology Centre TSK 2006
XML	Extensible Markup Language is the World Wide Web Consortium's recommendation for encoding structured data in an electronic format.	http://www.w3.org/

¹ ISO/IEC 8824-1- 2002

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Introduction

Maintained by the Information Department of the National Institute for Health and Welfare (THL), the Code Service² manages the preparation, distribution and maintenance of nationally uniform social and health care code sets, classifications, terminologies, form structures and coded data specifications. The Code Service is an essential part of the organisation and development of interoperable electronic services in social and health care. The Code Service concerns directly or indirectly all social and health care professionals and their customers.

Preparing this publication was triggered by the challenges with the resources related to schedules, task related strain and Code Service activities in the Information Structures and Classifications Unit of the THL Information Department. Later the publication preparation expanded to cover the process description and development of the activities as well as quality management. Describing the processes of preparing and maintaining nationwide code sets and the criteria for the preparation and updating, *the publication guides and serves the Code Service customers*. In addition of meeting the customer needs, this publication also illustrates to a certain extent the internal development of the Code Service.

Furthermore, the publication serves as part of the Information Department's information architecture description. The code service process description presented in the publication is congruent with the national public enterprise architecture development and thus follows the JHS 152 recommendation (The advisory Committee on Information Management in Public Administration JUHTA 2008). The publication *complements to the public enterprise architecture development in social and health care*.

The publication consists of three main parts that 1) describe the Code Service, its operational environment and core functions as well as the activities of related interest groups, 2) describe the preparation and maintenance of a code set from the perspective of a life cycle model, and 3) introduce process indicators, measuring points and quality steering and monitoring as well as process development needs related to the process descriptions. Moreover, the publication includes Code Service management forms with instructions and related metadata descriptions for the Code Service information management. For the purposes of this publication, the various data sets, classifications, terminologies, form structures and coded content specifications published in the Code Service are generally referred to with the term *code set*.

Present state assessment and need analysis

The Code Service maintains the code sets used in the customer and patient information systems in social and health care. The structured data thus coded in the electronic services are also utilised for statistics and registers. Structured data can also be utilised in the organisations' own enterprise resource planning (ERP) systems.

Over 200 code sets have so far been published on the code server. Electronic services are becoming more and more common, which will increase the number of code sets. Maintaining the code sets requires expert groups that consist of customers, interest groups and experts on the subject of a certain code set. Both the Code Service and expert group members felt the need to monitor the schedules of the code sets and increase the transparency of the Code Service activities. Moreover, as the technological solutions for nationwide electronic services are being developed and implemented phase by phase, the code server technology will also require maintenance and assessment of new solutions.

Active cooperation with interest groups and customers is an inherent part of the operations model of the Code Service. In order for the Code Service to even better meet the needs of its growing clientele, it has

² www.thl.fi/koodistopalvelu

become an important internal goal to develop Code Service activities by describing, monitoring, measuring and improving these activities through process thinking. It is the foundation for a high quality service.

External goals

The main external goal for the modelling of the Code Service activities is to describe the core functions in a customer-oriented way. On the basis of the feedback received from the Code Service cooperation network and during the preparation of this publication, the principles of the code service process and its related activities are not obvious to people outside THL but instead require guidance.

The target in the Code Service customer relationship management (CRM) is to identify the Code Service customers and their needs as well as to meet the identified customer needs. This target also includes customer guidance. From the Code Service perspective, this means a transparent process, open information, equality of services and the continuous improvement of customer service. There are explicit indicators for these goals, such as the scheduling of the various phases of the code set preparation process and specifying minimum criteria for these phases. This way the publication will also serve as a guidebook for customers who are preparing a code set or who need to update a published code set.

Internal goals

One of the main goals for this publication was to clarify the Code Service's core functions, to develop its operations model, to create quality and process indicators and to manage changes in internal activities. This is particularly important now since the Code Service will be very busy in the next few years owing to the continuous implementation of electronic services in social and health care at a national level. The volume of code sets to be published and maintained will grow considerably.

Regarding the development and rationalisation of the Code Service activities, it will be necessary to anticipate change, both *ad hoc* changes as well as target-oriented development of operations. From the Code Service perspective, change management and further development of activities is closely associated with sufficient resourcing and engaging of experts. Describing the core activities and responsibilities of the expert groups will clarify the groups' function, workload distribution and hierarchy in preparation process. The development needs that were discovered during the description of the code service processes are at the end of this publication, but are mostly internal development activities of the Code Service and the Information Department. Therefore we do not discuss them in detail in this publication.

Part I: Code Service

Code Service operational environment

The Code Service is one of THL's national statutory services. The Code Service's duty is to be in charge of the contents, quality, maintenance and nationwide distribution of the necessary code sets, classifications, form structures and other coded content specifications and associated terminologies widely used in the social welfare and health care sector (668/2008: *Act on the National Institute for Health and Welfare*). The Code Service produces all uniform national code sets that are needed in the processing of patient and customer documents as well as in nationwide data system services (Act 159/2007).

The preparation and maintenance of code sets is conducted in accordance with the process described in this publication. Decisions concerning the publication of code sets are done by officials, and each code set is accepted for preparation and publication by the Code Service Management Group. The operation of the Code Service is planned in advance at an annual planning meeting and with an annual cycle.

The Code Service activities are in line with THL's strategy and information management strategy. According to the goals of the information management strategy, the products and material based on THL's information resources are up-to-date, of a high quality and meet the customers' needs; information produced and compiled by THL is available to the public; the technical architecture is flexible; the staff is highly competent; and modern information management supports all activities. These strategic principles form the foundation for the goals of the Code Service's operation. THL's strategic goals also serve as strategic indicators for the code service process. A strategic goal is to improve customer service by increasing the transparency and uniformity of the preparation and maintenance processes of code sets and by intensifying the steering of processes.

Code Service interest groups and customers

The Act on the electronic processing of customer data in social and health care (159/2007) and the Decree on patient documentation (298/2009) state that THL is in charge of the Code Service and list the various bodies and interest groups that participate in the preparation of national data structures. These bodies are described in this publication only from the Code Service's perspective, as it is unnecessary to describe their entire activities here. All the users of code products are customers of the Code Service. In the list below, customers and interest groups have not been grouped as some of the bodies can act in either role depending on the circumstances. The list has been complemented with national and international bodies and projects that have triggered currently identified development needs for code sets.

Ministry of Social Affairs and Health (STM) is responsible for the general planning, steering and monitoring of the electronic processing of social and health care customer information, related information management and the management and execution of nationwide information system services. STM has made a specific agreement with THL and the Social Insurance Institution of Finland (Kela) on the execution of nationwide data structures and electronic services as regards the National Archive of Health Information (KanTa). In social welfare, a nationwide social welfare customer information system (KanSa) is being planned to support the electronic information management of the sector. STM also participates in the management and preparation of the public enterprise architecture in social and health care.

Ministry of Finance (VM) contributes to the development of electronic services for citizens in the area of social and health care with projects such as the Action Programme on eServices and eDemocracy (SADe). In the Code Service, this is apparent in matters such as terminology work. Furthermore, VM is active in the steering tasks of public administration (JUHTA³, JHS recommendations, public enterprise architecture) and is working on the common JHS metadata register for public administration. The Code

³ http://www.vm.fi/vm/fi/16_ict_toiminta/07_yhteistyöelimet/01_juhta/index.jsp

Service is participating in the JHS meta terminology work and the round of comments on the JHS meta terminology proposals.

Social Insurance Institution of Finland (Kela) organises and maintains nationwide KanTa Services and is responsible for the technical maintenance of the code server platform. These include the national eArchive for patient information, independent of the service provider, and related nationwide electronic services such as consent management on the use of patient information, viewing of patients' own information as well as the prescription centre and archive for electronic prescriptions. Kela is also responsible for certain national form templates and particularly the maintenance of the technical code sets of the KanTa Services as regards the eArchive, electronic prescriptions and patients' expressions of consent and living will. In addition, Kela produces CDA R2 specifications on the entities downloaded on the code server, such as form templates and Information Management Service's coded content specifications.

National Supervisory Authority for Welfare and Health (Valvira) is responsible for the supervision of the social welfare and health care sector. Valvira's certification authority services (CA-services) currently concern the nationwide healthcare information systems. The CA-services include identification, authorisation and electronic signature.

Association of Finnish Local and Regional Authorities (Kuntaliitto) is responsible for national classifications and terminologies, such as the national version of International Classification of Primary Care (ICPC-2), classifications for rehabilitation and specialist employees, laboratory techniques and procedures and radiological examination and procedure. The Association has its own expert groups for these matters. In addition, the Association participates in the preparation of electronic prescriptions and other KanTa Services and maintains certain national code sets that have been published on the code server.

Finnish Medicines Agency (Fimea) regulates medicinal, blood and tissue products and develops the pharmaceuticals sector. Fimea classifies pharmaceuticals and authorises the pharmaceutical products on the market. Fimea's register of medicinal products contains all the products approved by Fimea as well as products with temporary special permission for compassionate use, and includes classifications for the ATC code, dosage form, route (or method) of administration⁴, containers or delivery devices, and packaging. In addition, Fimea issues licences for pharmacies.

Population Register Centre (VRK) maintains the Population Information System, the primary purpose of which is to serve public administration. The System contains basic information about Finnish citizens as well as geographical information.

Statistics Finland (TK) directs and develops the National Statistical Service. The Statistics Act defines four statistical authorities, the Information Centre of the Ministry of Agriculture and Forestry, THL, Statistics Finland and the Finnish Customs, that have the right to collect data for statistical purposes by virtue of the data supply obligation prescribed in law. Statistics Finland is also in charge of the metadata of all statistics and the Official Statistics of Finland (SVT). In addition, it maintains the Standard Industrial Classification and social and health care indicators⁵.

HL7 Finland Association (HL7) promotes the development of information systems with the system integration principle and the use of information system standards in health care. It cooperates with the public administration, information system users, such as health care districts, and information system providers. HL7 produces CDA R2 specifications required by national electronic services, promotes interoperability by harmonisation and interface specifications and is responsible for certain technical code sets in accordance with the HL7 standard.

Other **standardisation organisations** contributing to the preparation and maintenance of code sets include Finnish Standards Association (SFS) that has information technology for social and health care as one of its areas of operation. SFS is member of the International Organization for Standardization (ISO) and

⁴ to be added in 2014

⁵ <http://www.findikaattori.fi/fi>

the European Committee for Standardization (CEN). There are about 40 ISO standards and some 30 SFS-EN standards concerning information technology in health care. THL's experts participate in the operation of international standardisation organisations. In addition, the classification work at WHO and NOMESCO has a direct impact on the Nordic and international classifications published on the code server.

Social and health care service providers maintain registers of the contents of their respective customer information systems and the users and user rights of their customer registers. Service providers of public health care are obliged to become users of the nationwide KanTa Services; this will also concern the service providers of private health care in future (*Ministry of Social Affairs and Health Decree on national health care IT system services*, 165/2012). *The Health Care Act* (1326/2010) also allows service providers to maintain a common patient information register.

Social and health care professionals are information producers and users of social and health care customer and patient information systems. User feedback and development suggestions have an impact on the contents of the code sets used in patient information systems and the management of their life cycle. Representatives from user organisations also participate in various expert groups.

Social and health care customers use the services of the social welfare and health care sector and participate in the development of these services by means such as customer satisfaction surveys. The law reform has taken account of empowering customers and patients by offering citizens nationwide electronic services such as viewing their own health information and authentication services. In the Code Service, customer needs are also accommodated in services such as terminologies by harmonising professional terms with the terminology used by customers.

Data system providers for social and health care participate in the development of nationwide social and health care services by means such as testing and piloting. Representatives from system providers contribute to the preparation of codes in expert groups and through national requests for comments.

Action Programme on eServices and eDemocracy (SADe⁶) develops comprehensive services for citizens, companies and the authorities. These customer-focused and interoperable services enhance quality and cost-efficiency in the public sector. STM is responsible for the strategic steering and monitoring of the social and health care services, while THL is in charge of the operative implementation. Development work is conducted in cooperation with the Association of Finnish Local and Regional Authorities and local bodies. The Action Programme includes the creation of a service directory based on official registers.

The joint European project **Smart Open Services for European Patients (epSOS)** develops a service infrastructure that demonstrates cross-border interoperability between electronic health record systems in Europe. The project particularly pilots the transfer of electronic prescriptions and patient information from one country to another so that the data content remains unchanged (semantic interoperability). The project includes 23 countries with THL representing Finland. The Information Department has so far produced material such as translations necessary for the integration services in the project.

In addition to the epSOS project, European data structures are also being harmonised in the **PARENT Joint Action** that aims at surveying the current situation with various registries and the harmonisation of registry data. The registries have not been surveyed before, and the objective is to study the contents (clinical, population groups), semantics (relevance, structures) and quality of the registries at a European level as well as converting the data collection process into an electronic form. Furthermore, the project will develop and pilot the use of international registry data. As a result, an administrative model for a joint international registry will be developed. As regards registries, European research and coordination are based on the development of eHealth infrastructure and the EU Directive on patient mobility. There is also a sub project called EHR4CR (Electronic Health Records for Clinical Research) to establish whether separate registries will be necessary at all if registry data could be extracted directly from existing patient information systems. In these international projects, the use of code sets is essential in informatin collection and usage.

⁶ www.thl.fi/sadesote

Public enterprise architecture

The Code Service operation takes into account the objectives of the public enterprise architecture development in social and health care that ensures the interoperability of operations, information and information system solutions while developing and steering their activity in cooperation with other bodies (STM 2012). The purpose of the public enterprise architecture development is to describe to all social and health care professionals the shared operations models, data contents and information system services. The operation of the Code Service is part of this entity, and the operations model of the Code Service described in this publication follows the objectives of the public enterprise architecture development. Regarding the code products, the Code Service is a part of the information architecture in social and health care, and thus the Code Service operation is linked to the administrative model of the nationwide social welfare and health care (SOTE) information architecture. The process description of the Code Service is also part of THL's information architecture descriptions.

In addition to shared descriptions, the main tools in public enterprise architecture include its administrative model, strategic planning with related architectural policies as well as the architectural development path and the management of the project portfolio. The public enterprise architecture development is managed and regularly monitored according to a plan. The information management and preparation and maintenance processes of the Code Service described in this publication are primarily associated with the logical level of public enterprise architecture in the fields of business and information architecture (Image 1). The development and description of the logical level include business and information process descriptions and main information resources descriptions.

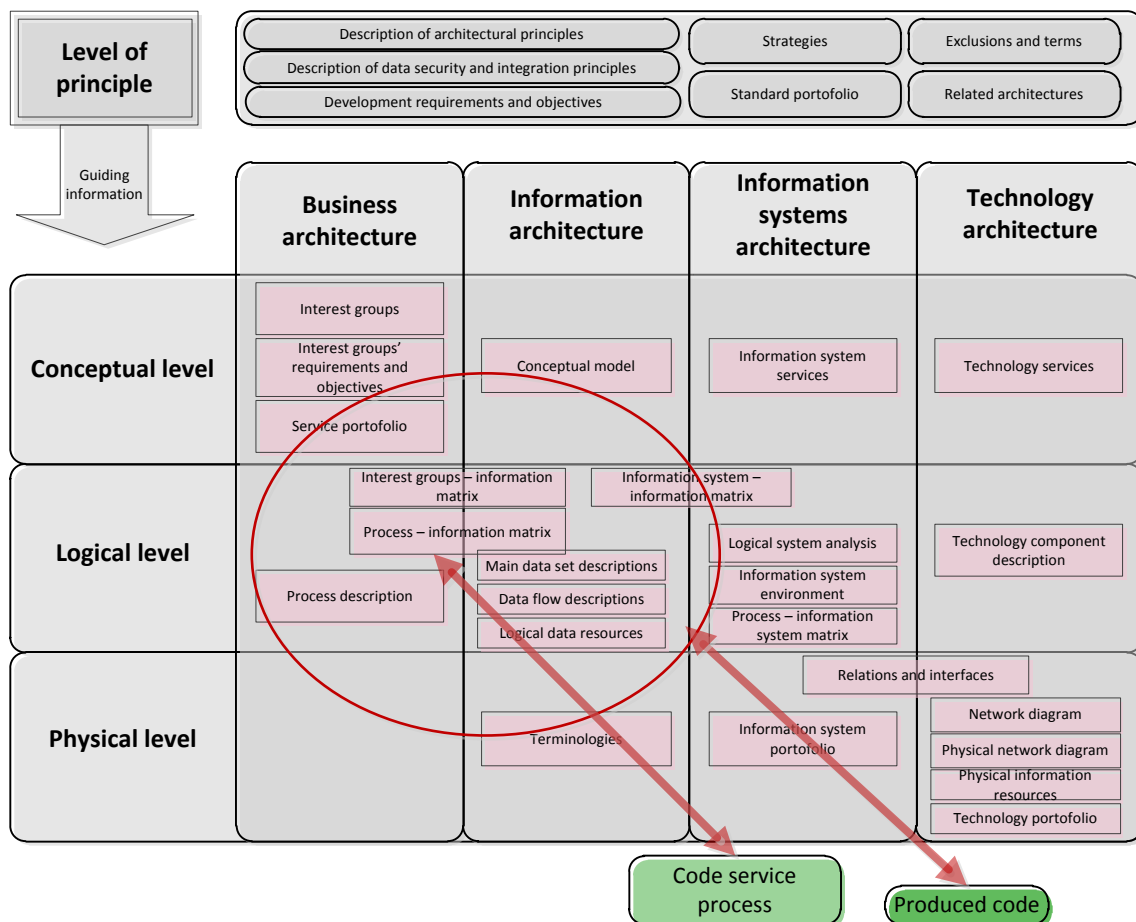


Image 1. The relationship with the code service process and code product with the public enterprise architecture.

This publication and other definitions and guidebooks

The Code Service description in this publication applies the principles of the public enterprise architecture development and follows the modelling method of the JHS 152 recommendation (JUHTA 2008). The modelling was done with the Business Process Model and Notation (BPMN 2009) and MS Visio tool.

The publication provides a foundation for the specifications of information management models (Image 2) for social and health care, as the description of the code service process and the Code Service data management are part of the logical and physical level of the information architecture description of social and health care. At the same time, the Code Service description is dependent on the policies created in the public enterprise architecture development.

In social welfare, information model and specification management has been described in publications discussing the management model of customer information specifications in social welfare (Ailio and Kärki 2013) and the management model of information specifications (Hyppönen et al, 2011). As regards health care, such a coherent description of this level is so far lacking.

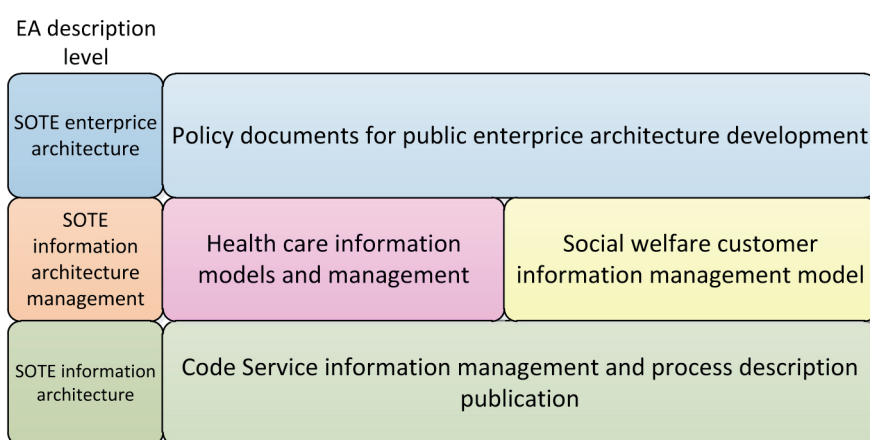


Image 2. The relationship between the policy documents for public enterprise architecture (EA) development and the modelling for social and health care (SOTE) information management with publication for the code service process description and information management.

In addition to the publications listed in Image 2, the following guidelines and guidebooks published earlier are also associated to the preparation and maintenance of the codes published in the Code Service:

- HL7 CDA R2 -lomakkeiden tuottamisen opas, version 1.0, 19.2.2009, THL. (*HL7 CDA R2 template guidebook*, in Finnish only)⁷
- KanTa-välittäjärekisterin liittymisohje, Koodistopalvelun ohje 20.3.2012, THL. (*Guidelines to joining the KanTa Services, Code Service guidelines*, in Finnish only)⁸
- ISO OID -yksilöintitunnuksen käytön kansalliset periaatteet sosiaali- ja terveysalalla. (*The national principles of the use of the ISO OID identifier in social and health care*, in Finnish only) Mäkelä, Matti and Lehtonen, Jari. Luokitukset, termistöt ja tilasto-ohjeet 1/2011, THL.⁹
- SOTE-organisaatiorekisteri, Tiedonkeruun tekninen ohje, version 1.2. (*SOTE organisation register; technical specifications for data collection*. Available at the Code Service website, in Finnish only)¹⁰

⁷ <http://www.thl.fi/thl-client/pdfs/17a9ba61-ebf7-453e-81c4-6e0f7185a969>

⁸ http://www.thl.fi/tilastoliite/koodistopalvelu/OHJE_KanTa_V%C3%A4litt%C3%A4j%C3%A4rekisteri.pdf

⁹ <http://www.thl.fi/thl-client/pdfs/688a1bf9-0513-44af-b032-68ccc73b5675>

¹⁰ <http://www.thl.fi/koodistopalvelu>

- SOTE-organisaatiorekisteri, Ohje terveydenhuollon yksiköiden tietojen ilmoittamisesta kansalliseen Koodistopalveluun. (*SOTE organisation registers; guidelines to entering health care unit data in the national Code Service*, in Finnish only) Luokitukset, termistöt ja tilasto-ohjeet 2/2010, THL.¹¹
- Tietojärjestelmäintegraatio, Koodistopalvelun tiedonsiirron tekninen ohje. Version 2.1, 22.5.2007, Stakes. (*Data system integration; technical specifications for data transfer*, in Finnish only)¹²
- Tietojärjestelmäintegraatio, Kansallisen Koodistopalvelun rajapinnat ja liittymisohje. Version 1.21, 16.9.2010, Kela ja THL. (*Data system integration; national Code Service interfaces and guidelines*, in Finnish only)¹³
- Tietotyypit, version 1.31, 31.8.2010, HL7-Finland. (*HL7 Data types*, Finnish version)¹⁴

Social Welfare Act (710/1982) and *Health Care Act* (1326/2010) provide the foundation for the production and use of the code sets. Other essential laws and decrees that have an impact on the Code Service operation are:

- Act on the National Institute for Health and Welfare (668/2008)
- Act on the steering of data management in public administration (634/2011)¹⁵
- Act on the Status and Rights of Patients (785/1992)
- Act on the electronic processing of customer data in social and health care (159/2007)¹⁵
- Ministry of Social Affairs and Health decree on the national data system services in health care (165/2012)¹⁵

¹¹ <http://www.thl.fi/thl-client/pdfs/7d2d95de-1864-489d-a19f-769dd49b7603>

¹² <http://www.thl.fi/thl-client/pdfs/8dc37eae-88de-41e9-b168-6d48d84e0880>

¹³ <http://www.thl.fi/thl-client/pdfs/01321ce1-e48e-4c6a-abe1-8b66f18860fc>

¹⁴ <http://www.kanta.fi/fi/web/ammattilaisille/hl7>

¹⁵ Not available in English

The operation of the Code Service

Code Service core processes

The core processes of the Code Service include the development and maintenance of the essential terms, data specifications and classifications in social and health care (Image 3). The operation of the Code Service is based on the tasks set by law, and the purpose is to meet customer needs with uniform code sets. Code Service customers include representatives of health care districts, social and health care professionals, international partners, non-governmental organisations and Finnish citizens.

The strategic goals mentioned in the previous chapter provide the guidelines for the implementation of the core processes. Their implementation is also steered by the Information Department's annual action plan and the monitoring of performance agreements. The core functions are particularly supported by expert group processing and other interest group activities. Furthermore, the management process of the Code Service, the annual cycle following the action plan and other applicable general instructions, operations model and document management at THL and the Information Department also have an impact on the implementation of the core processes.

Other functions associated with the implementation of the core processes include the monitoring and assessment of operation, which is part of the continuous development and improvement of the Code Service's operation based on internal evaluations and quality control. The output of the core processes is code products, i.e. up-to-date code sets, classifications and other data content specifications published on the code server.

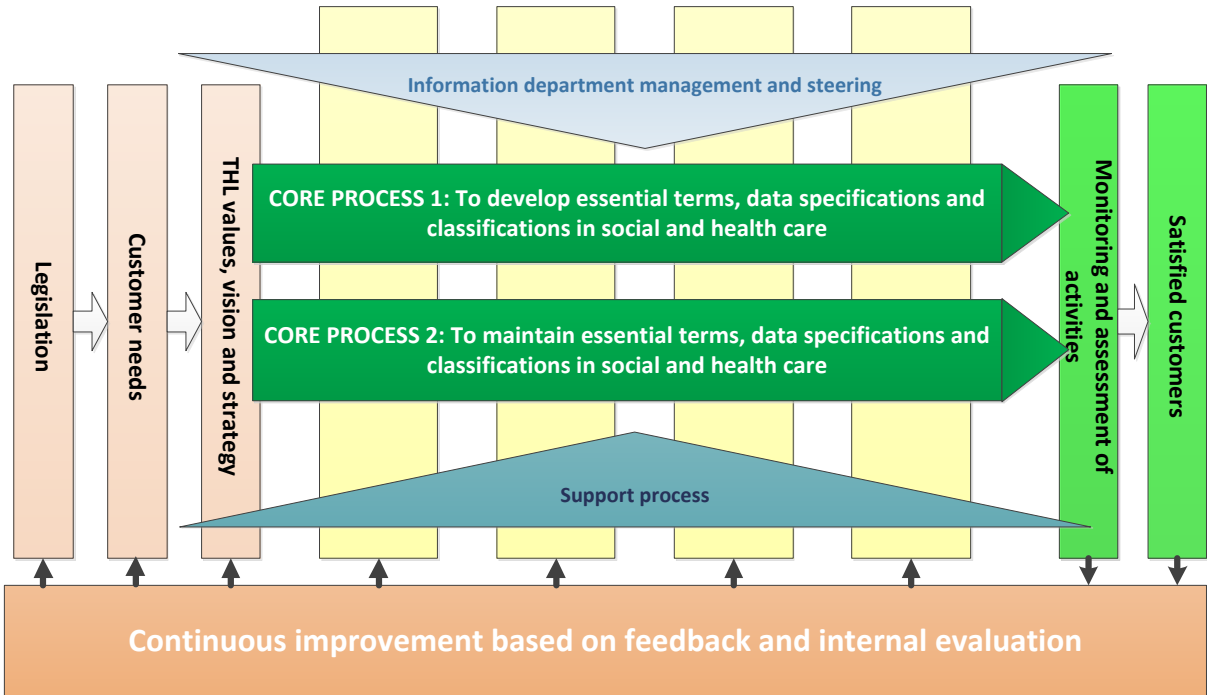


Image 3. Code Service core processes.

The operations model of the Code Service

The operations model (Image 4) shows the core activities in relation to core processes as well as in relation to steering and support processes. These include preparing, publishing and maintaining code sets, classifications and terminologies as well as other coded content specifications and form structures. The

activities also include the harmonisation of data structures, terminologies and glossaries as well as other terminology work that supports the execution of tasks. From the core function's perspective, the preparation of code sets also includes the specifications of data structures required by the technical implementation of information collection for statistical and register purposes, official monitoring duties and nationwide electronic service systems.

The support functions include the expert groups' work related to the preparation and maintenance processes as well as the support for the groups' working and organisation. In addition, the support processes include work in various interest groups and other expert tasks for the Code Service employees. Other support processes include public relations, collection and processing of customer feedback and, when necessary, the organisation of training or user support as well as the provision of expert opinions.

Steering processes include measuring the accomplishment of goals as well as assessment and development of operations. In addition, steering processes include controlled change management with annual cycles, monitoring of the implementation and efficiency of operations as well as quality control.

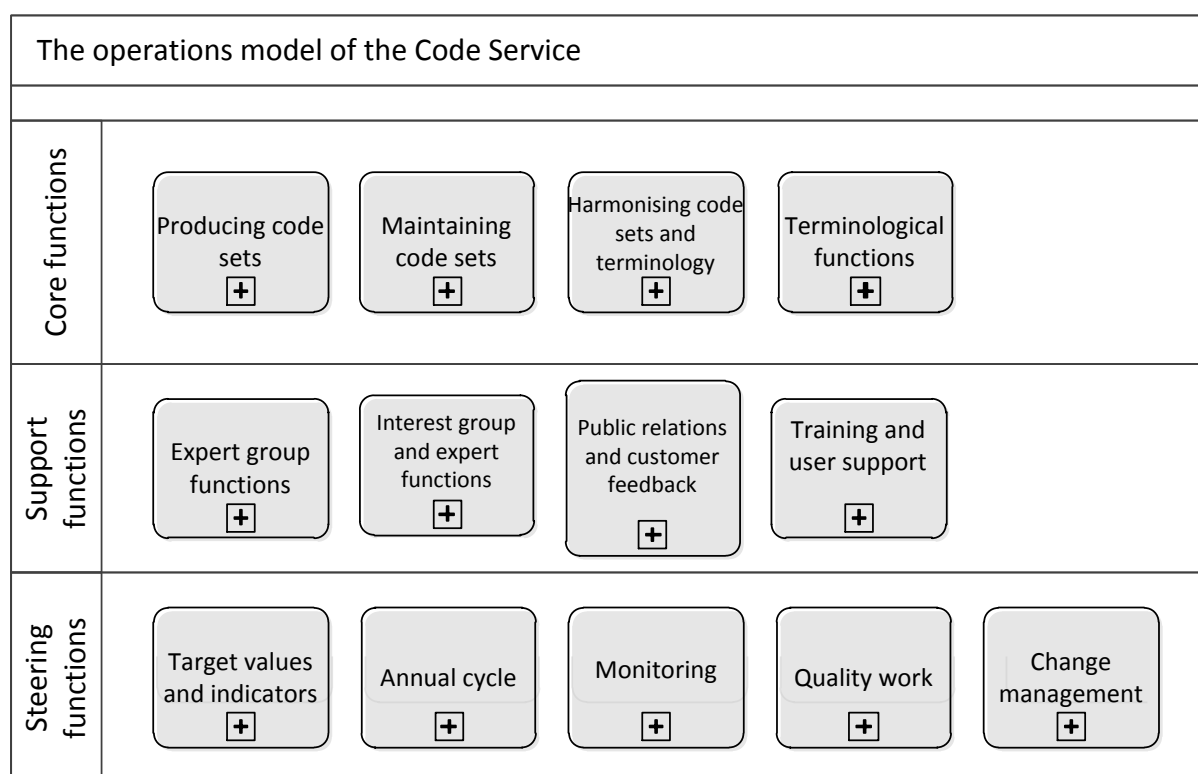


Image 4. The operations model of the Code Service with core, support and steering functions.

Contents of the code server

Data structures produced by the Code Service, such as code sets, classifications, terminologies, form structures and other coded content specifications are published on the code server. Code sets accepted to be published on the code server are edited in an MS Excel spreadsheet where the data required by the code server are filled in the appropriate fields. In addition to the contents, for example, an identifier, name, purpose and responsible organisation are specified for each imported code set.

The code server formats currently specified include classifications, organisation classifications, equivalencies or mapping of classifications as well as form structures and other coded content specifications. To support the code server format, various specification documents or user guides are produced and the information contained in the code set or the relationship of the code set to other code sets

is modelled. Unit for the Operational Management of Health and Welfare Information (OPER) is responsible for the publication and maintenance of the specifications related to the KanTa Services.

The published code sets are all used in social and health care. The code sets published on the code server can be grouped from various perspectives, such as purpose or the expert groups participating in the maintenance of the code sets.

Code server platform

The common code sets required by the electronic customer information systems in social and health care can be downloaded from the code server. The software platform of the code server is the CodeServer of-the-shelf software¹⁶ developed by Datawell Oy that is intended for the management of master and metadata. It is used for purposes such as maintaining the organisation's own and customer information, pricelists and various code sets and their interrelations. Other functions of the CodeServer solutions include the maintenance of hierarchies between organisation units, versioning of classifications and code sets, management of validity dates at code and code set levels as well as archiving. The CodeServer product contains many interfaces for other IT systems to be integrated with the CodeServer.

From a technical perspective, the CodeServer has two kinds of classifications: organisations and codes. The classification of codes consists of single codes, such as the ICD-10 classification of diseases, and their metadata. The classification of organisations consists of single organisation units and their data, including hierarchical levels. Each code and organisation unit has its own basic information, such as Identifier and Name. They can also have optional information and references to other codes or units.

Use of code products

Code products consist of the code sets and their specifications published on the code server and intended for national use. Client information saved with the code products can be used in various system applications, such as decision support systems in professional work. In addition, code sets can also be used as part of the information collection and reporting systems in enterprise resource planning systems (ERP). With ERPs and other operations, the code server provides code sets necessary for the use but does not monitor their downloading or use.

The use of code products from the perspective of their significance and role is not discussed in this publication but in *Rakenteisen kirjaamisen opas* (Guidebook to Structured Documenting of Patient Information by Lehtovirta et al, to be published in 2013). The need and use of the code sets published in the Code Service have also been described as part of the requirement specifications for the KanTa architecture (KanTa, 2007).

Image 5 below shows what the use of code sets means in the patient information system environment. All the entries in the clinical documents are made under the heading selected in the appropriate window. The entry contains both the structured data understood by the patient information system and the data displayed as text. In the image, the *reason for treatment* is given with the ICD-10 code J06.9. The user, however, will see the code's name, *acute upper respiratory infection*.

The entries in the clinical documents can also be made as free text, but it can compromise further utilisation of the information. The user can make manual searches in free text, but it is not easy to use for secondary purposes. Depending on the patient information system, information entered in structured form can be automatically used in different windows, extra windows and summaries, forms and certificates. This way the information already entered will not have to be re-entered. Similarly, information entered in a structured form can be used in the Information Management Service for the production of aggregate

¹⁶ http://www.datawell.fi/suomi/ratkaisut_codeserver.php

information and displayed in a patient information summary window. This is possible because besides the information content, the structured entry also includes metadata.

The common information specifications of structured data are implemented with interoperability principles according to the Clinical Document Architecture (CDA) standard, which enables the transfer and use of patient information across platforms and various patient information systems. This also shows the benefits of the National Archive of Health Information (KanTa) from the perspective of patient safety. In future, patient information entered in a structured form with shared code products could also be used for the automation of functions such as register notifications and statistical reporting.

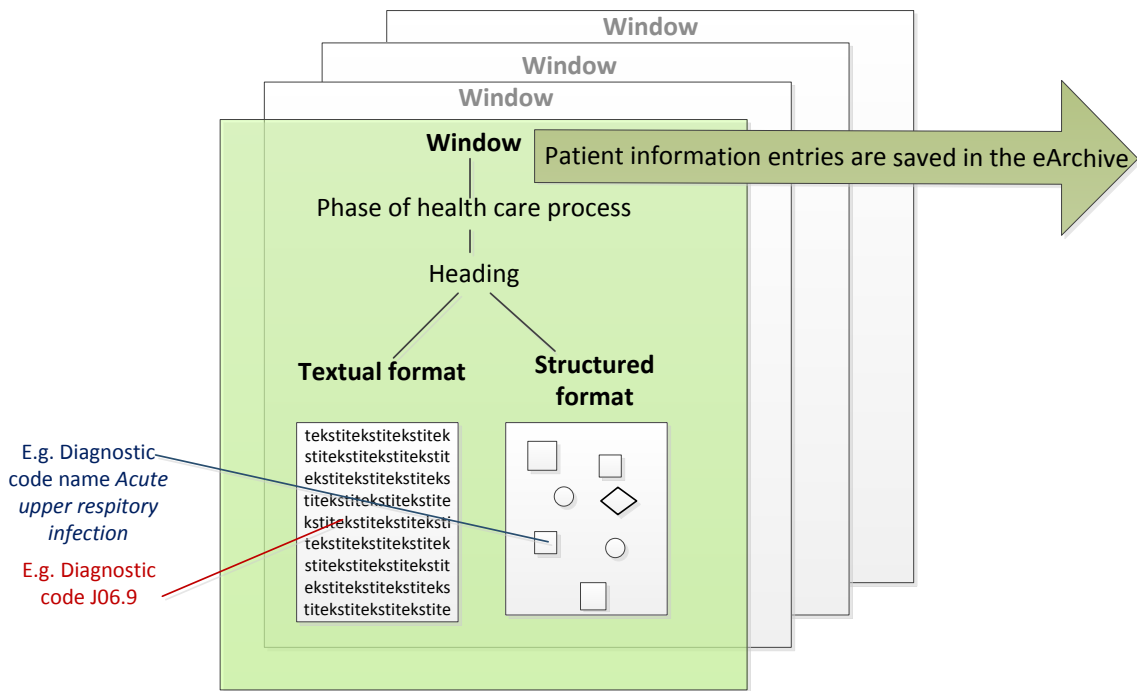


Image 5. Making and saving an entry in a clinical document from the code set perspective.

Groups participating in the Code Service activities

There are two administrative groups and 27 expert groups maintained by THL and four groups maintained by the Association of Finnish Local and Regional Authorities that participate in the activities of the Code Service (situation in March 2013).

Administrative groups

The preparation of a new code set and the updates of an existing code set are processed in the administrative process of the Code Service. The administrative groups that participate in the process are the Code Service Management Group and the Code Service Publishing Group.

Code Service Management Group

Assigned by THL, the group steers and coordinates Code Service activities. The members are selected by the Director General of THL at the Information Department's Director's proposal, and their term of office is two years. There are currently 22 members in the Code Service Management Group. In addition to the members, Code Service experts and presenting officials take part in the meetings.

The main task of the Management Group is to steer the national Code Service activities as described in the act on the electronic processing of customer data in social and health care. The Management Group discusses and accepts code sets proposed for the national code server distribution. In its regular monthly meetings, the Management Group evaluates the necessity, purpose and interoperability of the code sets. In addition, the Management Group discusses various actions for the development of the code server activities.

According to the Code Service administrative process, the Management Group accepts code set proposals for preparation and decides on their urgency rating. At the Management Group's second processing, a code set is either approved for publication or returned to preparation. This ensures that the code set has been created according to the preparation process. After a code set has been approved by the Management Group, it can be processed by the Code Service Publishing Group. The minutes of the Management Group's meetings are archived.

Code Service Publishing Group

The Code Service Publishing Group (i.e. the Quality Group) is set by THL and consists of Information Department's employees. Its term of office lasts until further notice, and the memberships are inspected annually. The Quality Group's operation is part of the Information Departments basic tasks, and it convenes every two weeks. The Quality Group currently has 11 members, and in addition to them, the preparers of the code sets to be discussed also attend the meetings.

The task of the Quality Group is to ensure the quality of the published code sets, which includes the inspection and harmonisation of the contents and terminology and the assessment of the general classification principles, technical correctness and usability. Social welfare and medical experts as well as a terminologist provide a written statement on all the code sets accepted in the Quality Group. In addition, the Quality Group monitors the preparation and updating process of the code sets and their publication on the code server. The minutes of the Quality Group's meetings are archived.

Code Service expert groups

THL has appointed expert groups (Image 6) for the preparation and updating of code sets, the members of which are experts of their own fields. They can also propose new code sets and coded content

specifications. Even if the expert groups have no power of decision, their impact on the preparation of the contents of the code sets is significant.

THL's decision to assign each expert group lists the group's main responsibilities, tasks, members and term of office. Expert groups' term of office is usually two years.

The members of **the clinical expert groups** are medical specialists who are the experts of their own fields. The clinical expert groups' main responsibility used to be the updating of the codes related to the maintenance and development of the national procedure classification. Currently, their tasks have expanded also to cover the coded content specifications and code sets of the electronic structured patient records related to their own respective special fields. In addition, clinical expert groups complement to the competence of the expert group on nationally uniform structured patient records (KAYRA).

The chairs of the clinical expert groups form the **coordinating group**. This group makes summaries of the statements of all the clinical expert groups. The chair of the coordinating group makes a statement to KAYRA and the Code Service Management Group for the second processing of the code set.

The expert groups of the structured patient record consist of **the expert group on nationally uniform structured patient records** (KAYRA) and its two subgroups: the subgroup of basic and occupational health care and the subgroup of nursing. Other expert groups of the structured patient record are **the expert group on data structures in oral health care** and **the expert group on data structures in paediatric and adolescent health care**. These groups are multiprofessional expert groups of health care that participate in the preparation of social welfare and health care data contents and related code sets published in the code server. The code sets related to the structured patient record are presented in KAYRA, and the expert group's statement is taken into account in the preparation work before the second processing by the Code Service Management Group. Preparation projects that require particular competence of a certain special field are discussed in the clinical expert group on the field in question before their processing in KAYRA. In addition, KAYRA may ask for comments from clinical expert groups or their coordinating group if necessary.

As regards social welfare, the groups and subgroups are currently being formed. From the perspective of the nationwide social welfare customer information system (KanSa), THL is preparing uniform social welfare customer documents, classifications and glossaries. To support this work, **an expert group on customer documents and classifications in social welfare** has been established. The members of this group are experts of social services. The expert group will also develop terminology and glossaries of social welfare. In addition, it will monitor the use and functionality of customer documents and classifications.

The technical expert group on code sets discusses technical code sets that usually are not visible to the user as well as interoperability issues related to code technology in national information system services.

In addition to the expert groups listed here, other subgroups and/or open groups can also participate in the preparation work at THL as necessary. Other expert groups at THL include **the expert groups on statistics and registers**, expert groups of interest groups, such as the groups of the Association of Finnish Local and Regional Authorities¹⁷, and other possible expert groups. If necessary, expert opinions for the preparation can also be invited from other cooperation bodies and professionals.

Expert groups' work process

The operation of the THL expert groups is linked to the various phases of the code service process. When the Code Service has received a proposal for a new code set, a representative appointed by THL submits the proposal to the expert group responsible for the field in question.

¹⁷ <http://www.kunnat.net/fi/asiantuntijapalvelut/soster/nimikkeistot-luokitukset/Sivut/default.aspx>

The content of a code set is prepared as official work in close cooperation with experts in the expert groups. During the preparation, comments may be invited from the representatives of the interest groups. This is to ensure that the impact of the proposal or the consequences of the new code set will be taken into account by all parties concerned.

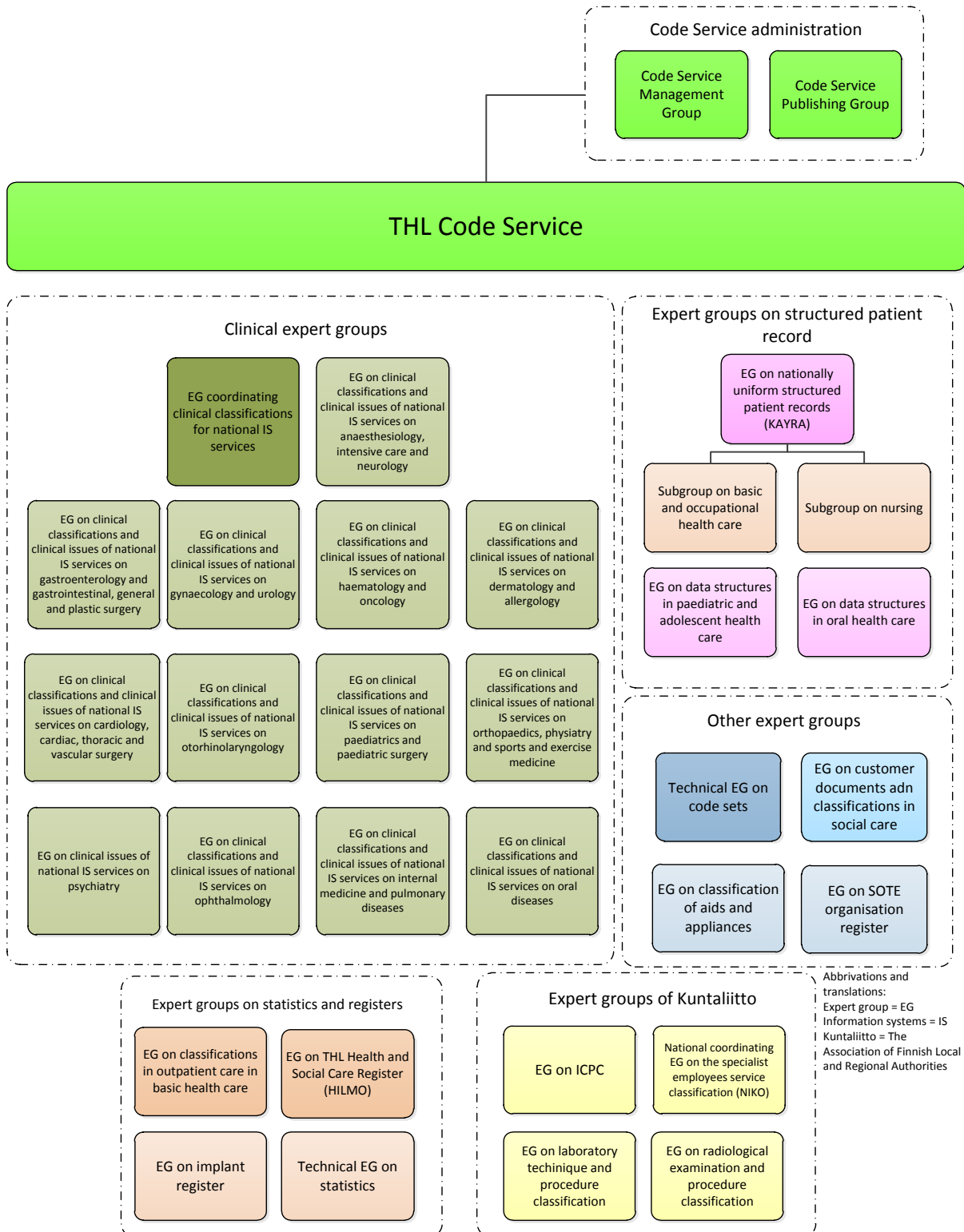


Image 6. The administrative groups and expert groups of the THL Code Service (situation in March 2013).

The processing of a new code set proposal (see Image 11) includes the processing of the proposal in an expert group or subgroup and, in case of a health care code set, in KAYRA, or in case of a social welfare code set, in an expert group in social care. Technical code set proposals and other proposals requiring technical inspections are discussed in the technical expert group on code sets. This usually happens after the KAYRA processing and before the second processing by the Code Service Management Group. Before the code service processing, the code set in question has been prepared or commented on by all the appropriate expert groups.

Expert group processing has been defined as a value driving activity in the code service process. Any added value created on the basis of expert group processing or the rounds of comments for interest groups or other bodies must be proportioned to the total time used for the preparation.

Expert group metadata

Attached to this publication (see Attachment 3) is the metadata form for the expert groups. It contains the metadata of the expert group, such as its name and the appointment decision's diary number, term of office, contact data of the chair and secretary, area of responsibility, the code sets the life cycle management of which the group was set up for, name of the presenting official and contact person, any further information and the group's relation with other expert groups as shown in the conceptual model in Image 7.

On the basis of the expert group metadata, it will be easier to assign the responsibility of the maintenance of a certain code set under discussion to an appropriate expert group. It will also be easier to find the appropriate expert group for a code set that needs updating.

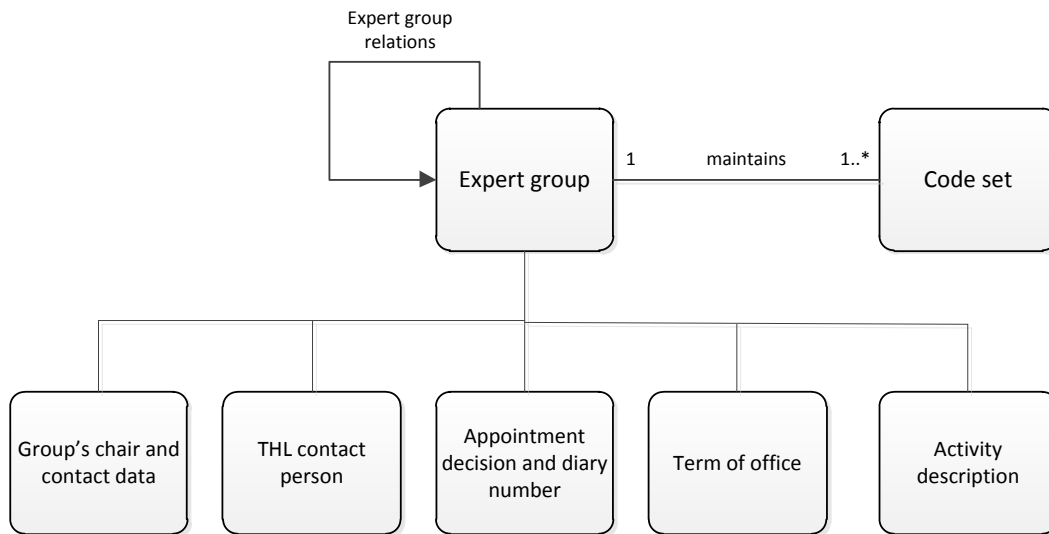


Image 7. The conceptual model of expert group metadata.

Part II: Code set life cycle

Code set life cycle and administration

Code set life cycle

The life cycle of a code set (Image 8) begins when a need for a new code set is discovered. The next phase of the life cycle model is the development and planning of the code set, which is called the code set preparation from the Code Service's perspective. Then follow the approval of the prepared code set and its publication and uploading on the code server either as active or with the test status. When the director of the THL Information Department has signed the decision to publish and the head of the Information Structures and Classifications Unit has ensured that the code set has been published, the code set will enter the testing and piloting phase in the environment designed for its use. Then follow the adoption of the code set, its use in production and entering the maintenance phase. The Code Service is responsible for the maintenance and necessary updates of the code set, as the first update needs are usually detected during testing, piloting or the early stages of its use in production. In the life cycle model, the use of a code set terminates when it is replaced with a new one or when it is no longer recommended for use. After the termination of a code set, its contents can still be recycled for the update or preparation of a new, replacing code set.

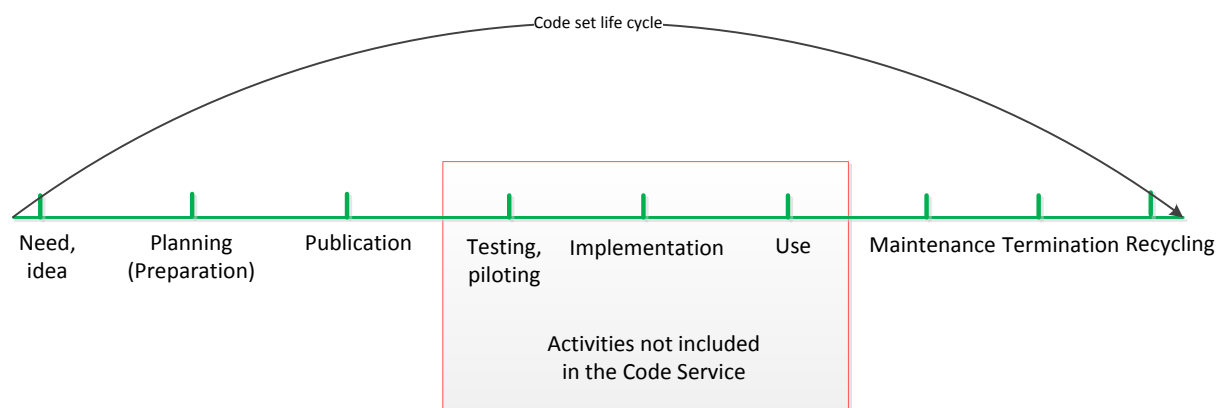


Image 8. Code set life cycle

Code Service administration process

In order for a code set to be published on the code server, its preparation needs to go through an administrative approval procedure (Image 9). The administrative process begins at the Code Service Management Group with the first processing of the code set proposal where it is ensured that the code set under preparation meets with the necessity criteria for a national code set. At the same time, an urgency rating is given on the preparation of the code set. The clinical expert groups on the field in question participate in the preparation of the code set. Code sets for social welfare and statistics and registers are processed in their respective expert groups. After the expert group processing, the code set or group of code sets is processed in a general expert group. For example, all code sets related to the structured patient record are processed in KAYRA as they are not code sets that support purely technical activities. Technical code sets are always processed in the technical expert group on code sets. The written statements of these expert groups are discussed in the approval procedure by the Code Service Management Group where the degree of preparation of the publication is ensured (see Attachment 2).

After the approval procedure, the code set is processed in the Code Service Quality Group where the code set's status is considered with regard to technology, terminology and contents. When the preparer has made the changes required by the Quality Group, officials ensure that all the changes entered in the minutes

of the Quality Group have been made. After this, the director of the THL Information Department signs the permission to publish, and the code set will be downloaded on the code server. The permission to publish is archived.

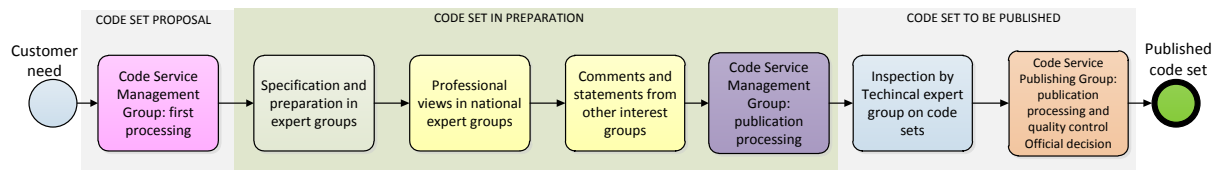


Image 9. The administration process related to the preparation of a code set.

The preparation phase often has a round of comments in other interest groups (see Image 9). The administrative documents created during the code set preparation process are shown in Image 10. The minutes of the previous preparation phase are always used at the following phase.

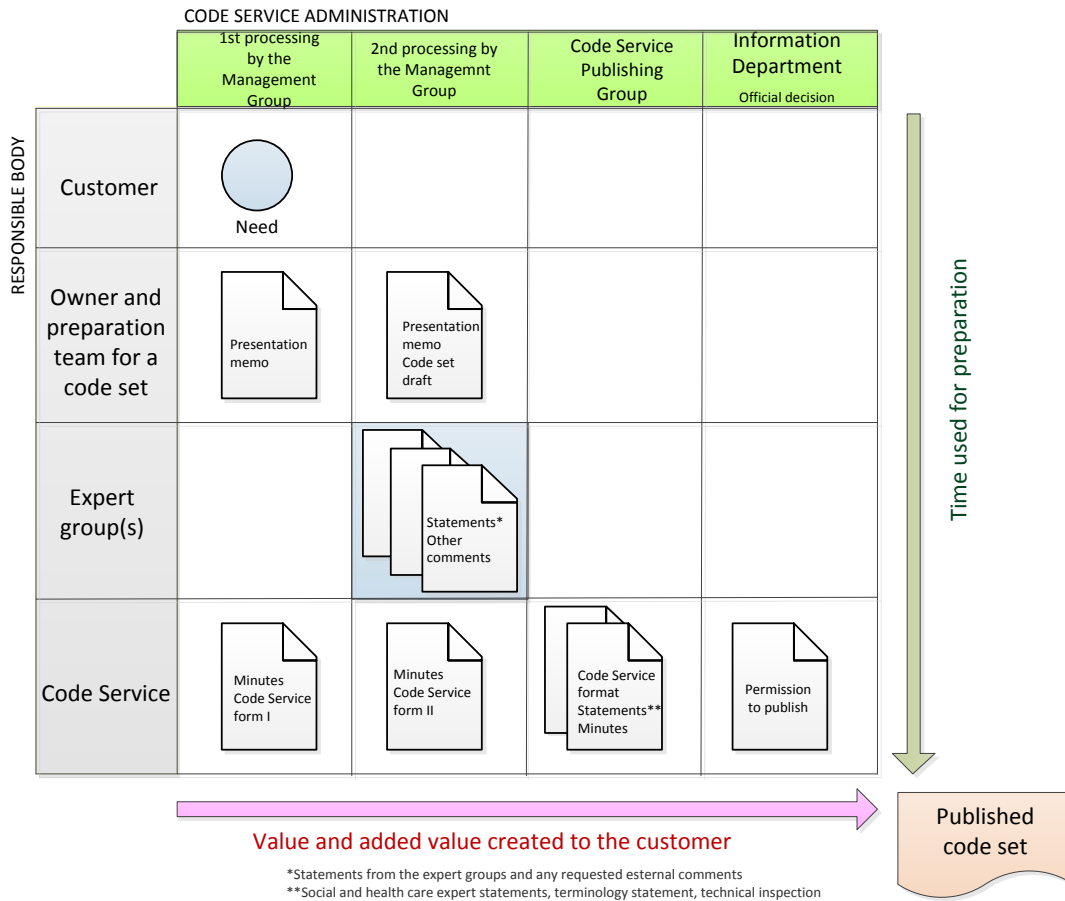


Image 10. A matrix of the administrative process in the Code Service

Preparation of a new code set

The preparation of code sets for publication follows the core process 1 (see Image 3 on page 23). The need for a new code set can arise at the Code Service from various sources. Usually the need is expressed by the end users, regional or national bodies in social and health care or providers of patient information systems. The need for a new code set can also arise from changes in legislation.

Necessity criteria

National code sets published in the Code Service must meet at least one of the following necessity criteria in order to be accepted for preparation in the Code Service:

1. There is a need for the code set in social and health care based on legislation.
 - a. This need can also be based on the monitoring of use.
 - b. This need can also be based on the supervision of use.
2. There is a need for the code set related to the use of nationally uniform data structures.
3. There is a need for the code set related to internationally uniform data structures, standards or terminologies.
4. There is a need for the code set based on the obligation to provide data for statistical purposes, which is also a necessity criterion based on legislation.
5. There is a need for the code set by a nationally significant interest group.
6. There is a need for the code set based on other official need.
7. There is another need for the code set that will be justified in the code set proposal.

Preparation of the code set proposal

An organisation or body that needs a new national code set submits a written presentation with a need justification to the Code Service Management Group (see Images 11 and 12). If necessary, the Code Service provides guidance for the preparation of the presentation.

Once the Code Service Management Group has concluded that the code set proposal meets the criteria for a national code set, code set preparation may begin. The preparation requires an account of financing and resourcing by the preparer. This account is made by the preparer of the code set proposal, and if necessary, THL Code Service team will assist in this as in other phases of code set preparation. The presentation memo is submitted for Management Group processing according to normal practice. If the person presenting the code set proposal cannot attend the meeting, the presentation memo is submitted with a signature.

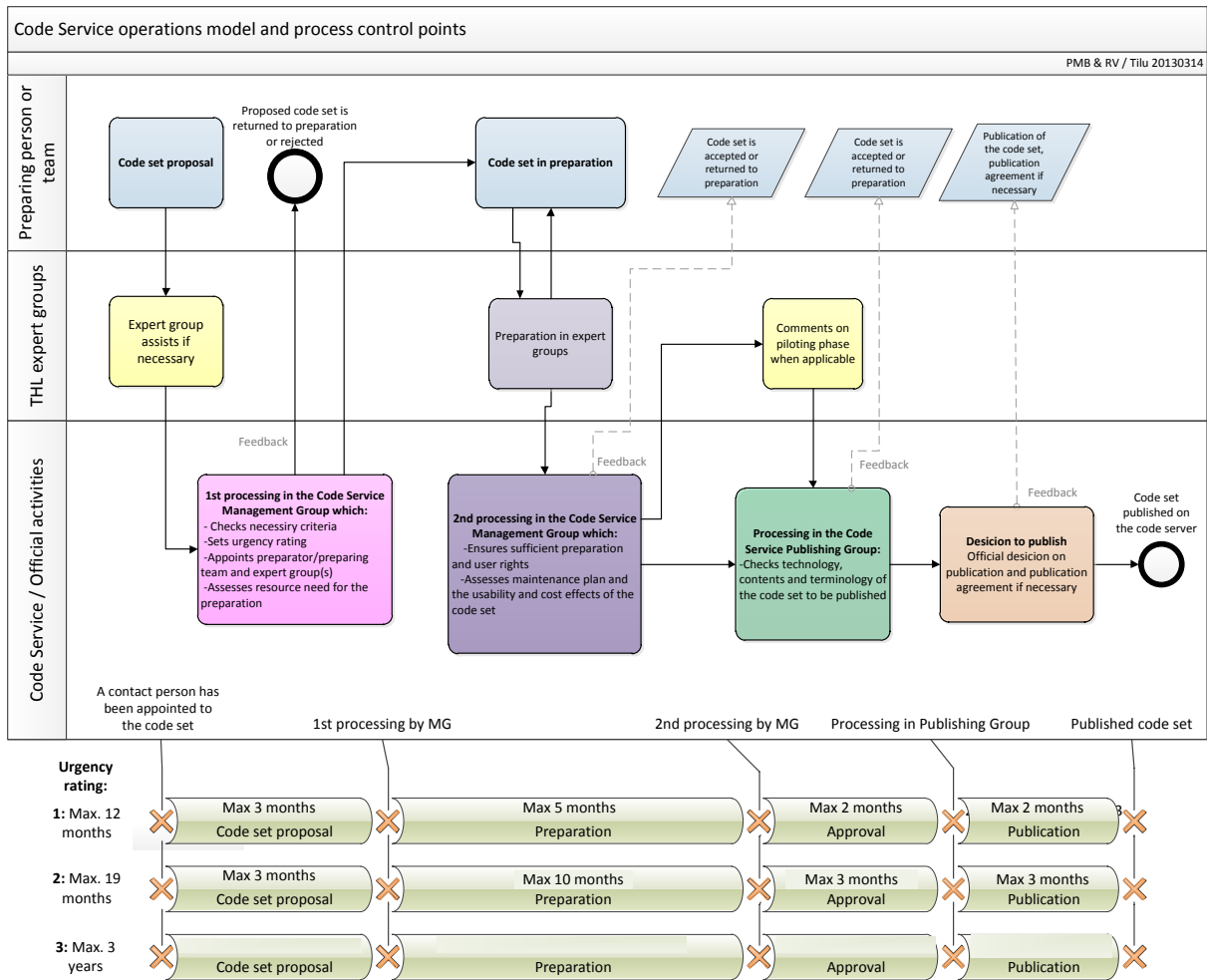


Image 11. The preparation of a new code set as a general-level description.

The preparer's tasks

The person or body preparing the code set proposal has to establish the following: 1) the purpose of the code set in relation to the national function of the Code Service and the area of use; 2) the relation of the code set with other code sets in the same topic; 3) the interoperability of the code set with the other code sets in the same topic.

For the first processing by the Code Service Management Group, the code set proposal has to include the following (cf. Attachment 1):

- the code set has a contact person at THL
- a person or body proposed to prepare the code set
- a description of the resourcing and financing of the code set preparation
- a description of the contents of the code set
- a description of the plan to prepare the code set
- a description of the purpose of the code set
- a description of the perceived environment for the use of the code set
- a description of the relation of the code set with other code sets for the same purpose or environment
- a preliminary expert group appointed to be responsible for the code set

Appropriate, diligent and active preparation will help the Code Service Management Group in their work and accelerate the entire process. In the first processing, the Code Service Management Group assesses matters such as the need, costs and preparation time of the code set (urgency rating, see below)

and confirms the expert group processing needed in the preparation. The preparer's presence in the second processing, in particular, may accelerate the process, as any questions can be answered right away. The preparer of the code set will receive an extract from the minutes on the processing and decisions concerning the code set in question. A code set proposal becomes a code set in preparation after the Code Service Management Group's approval.

Urgency rating

The preparer of the code set proposal may suggest an urgency rating which serves as a preparation schedule. The processing times in the urgency rating are customer promises that also work as measuring points for the code service process. The Code Service Management Group inspects the code set proposal and decides on the urgency rating on the basis of the following criteria (see Image 11).

In the first urgency rating (3 + 5 + 2 + 2 months), the code set will be published within a year. If the preparation is properly done at various phases of the process, the code set may even be published in a shorter time than a year. This group includes the following code sets:

- There is a statutory obligation and binding time limit set for the publication of the code set.
- The code set is part of a national publication that is timed in the annual cycle.
- The code set is part of national register and statistical service that is timed in the annual cycle.
- The publication of the code set is critical with regard to the functionality of national electronic services.

In the first urgency rating, the first processing takes a maximum of three months, preparation before the second processing a maximum of five months, preparation and approval by the Code Service a maximum of two months and finally the updating on the code server takes a maximum of two months.

In the second urgency rating (3 + 10 + 3 + 3 months) the code set will be published within 18 months. The first processing takes a maximum of three months, the preparation a maximum of ten months, the second processing a maximum of three months and the publication also takes a maximum of three months. This group includes the following code sets:

- There is a statutory obligation for the publication of the code set.
- There is a significant national need for the code set, but no binding time limit has been set in legislation.
- The code set has a large user group.
- The code set is part of an extensive, scheduled preparation project.
 - The code set meets some of the criteria in the first urgency rating, but the resource effects of its preparation are so significant that its preparation is scheduled for a longer period of time to even out the resources.

In the third urgency rating the code set will be published within three years, after which the preparation will have to be restarted if it has not reached its goal. In order for a code set of the third urgency rating to be accepted for preparation, it also has to meet one or more of the general necessity criteria of the Code Service.

As regards code sets of the second and third urgency rating, further assessment of the cost effects of the preparation may be necessary. A code set that is clearly necessary and reasonable in costs usually falls in the second urgency rating. A code set that is clearly necessary and has been prepared well but is expensive to create (e.g. the preparation requires lots of human resources) usually falls in the third urgency rating.

Approval of a code set in preparation

When a code set has been approved by the Code Service Management Group in the first processing to be prepared, the group will appoint a responsible preparation team, an owner candidate for the team and/or a contact person at THL. The preparation team is responsible for the production of the code set in preparation for the second processing, for requesting necessary statements and for organising a round of comments. The Code Service assists the preparation team if necessary.

In the second processing, the Code Service Management Group appoints the final owner of the code set, usually the body responsible for the maintenance of the code set. In the second processing, the following matters are discussed before the code set is approved for publication:

- The contents of the code set has been sufficiently prepared and described (e.g. code server format, data model and/or a specification document supporting these).
- The need for the code set has been justified.
- The use and usability of the code set has been assessed as far as possible.
- The development and maintenance plan for the code set has been made and assessed.
- The maintenance costs of the code set have been estimated.
- The completion date of the Swedish translation of the code set has been given or the production of the translation has been otherwise stated.
- The user rights of the code set have been stated.

In the second processing, statements and suggested amendments by expert groups are also presented. If the Management Group finds the preparation of the code set insufficient, it will return it to preparation and state that the conditions for publication are not yet fulfilled. In such a case, the deficiencies in the preparation and any suggestions for further preparation, study or requests for comments will be listed in the minutes for the preparation team.

When the Code Service Management Group accepts a new code set, it means that the data content and maintenance process of the code set has been accepted and that an expert group or owner responsible for its maintenance and monitoring has been appointed. The Management Group may also have expressed the need for usability assessment or piloting.

Publication of a new code set

When a code set has been approved by the Code Service Management Group, it will be converted to the code server format. In its technical inspection, matters such as the names of the data fields, abbreviations, descriptions of fields, data types, mandatory fields, repetitions, code set references etc. can be checked. In addition to the technical inspection, comments on the data set's contents are requested from social and health care experts and a terminologist. The experts are a chief physician and a social welfare expert used by the Code Service. Comments on terminology are provided by the terminology expert of the Code Service. A good practice in code set preparation includes cooperation with the terminologist during the preparation phase, in addition to the comments on contents received from the expert groups. The terminologist tests the interoperability of the code set with other code sets, suggests necessary harmonisation of terminology and revises the language.

Once the code set's contents, terminology and technology have been commented on or inspected and it has been converted to the code server format, it is ready for the last processing by the Code Service Quality Group before publication. The Quality Group inspects the contents and technical functionality of the code set. When the code set is ready for publication, it is technically functional and understandable to the user when it is downloaded from the code server to users' data systems. An official decision and a publication agreement, when necessary, are made on the publication of the code set.

In summary, the criteria for the publication phase of a code set are as follows:

- the code set has been converted to the code server format (a specified MS Excel template);
- any changes requested by the Code Service Management Group have been made in the code set;
- comments on the contents of the code set has been received from social and health care experts;
- comment on the terminology of the code set have been received;
- a representative of the Code Service has conducted a technical inspection on the code set;
- the Swedish translation of the code set has been planned or completed; and
- the user rights of the code set have been established and the signing parties have been appointed, if the code set needs a permission to publish.

Maintenance plan for a new code set

The publication of a code set requires a maintenance plan. This means that the expert group responsible for its maintenance has been appointed and the necessary maintenance cycle has been described. Some code sets are updated annually after publication. Impending annual updates can be included in the annual cycle plan of the Code Service in order to anticipate update backlog in the code service process. In the following chapter *Updating and maintenance of a published code set*, the updating is described from the perspective of updating a single code set.

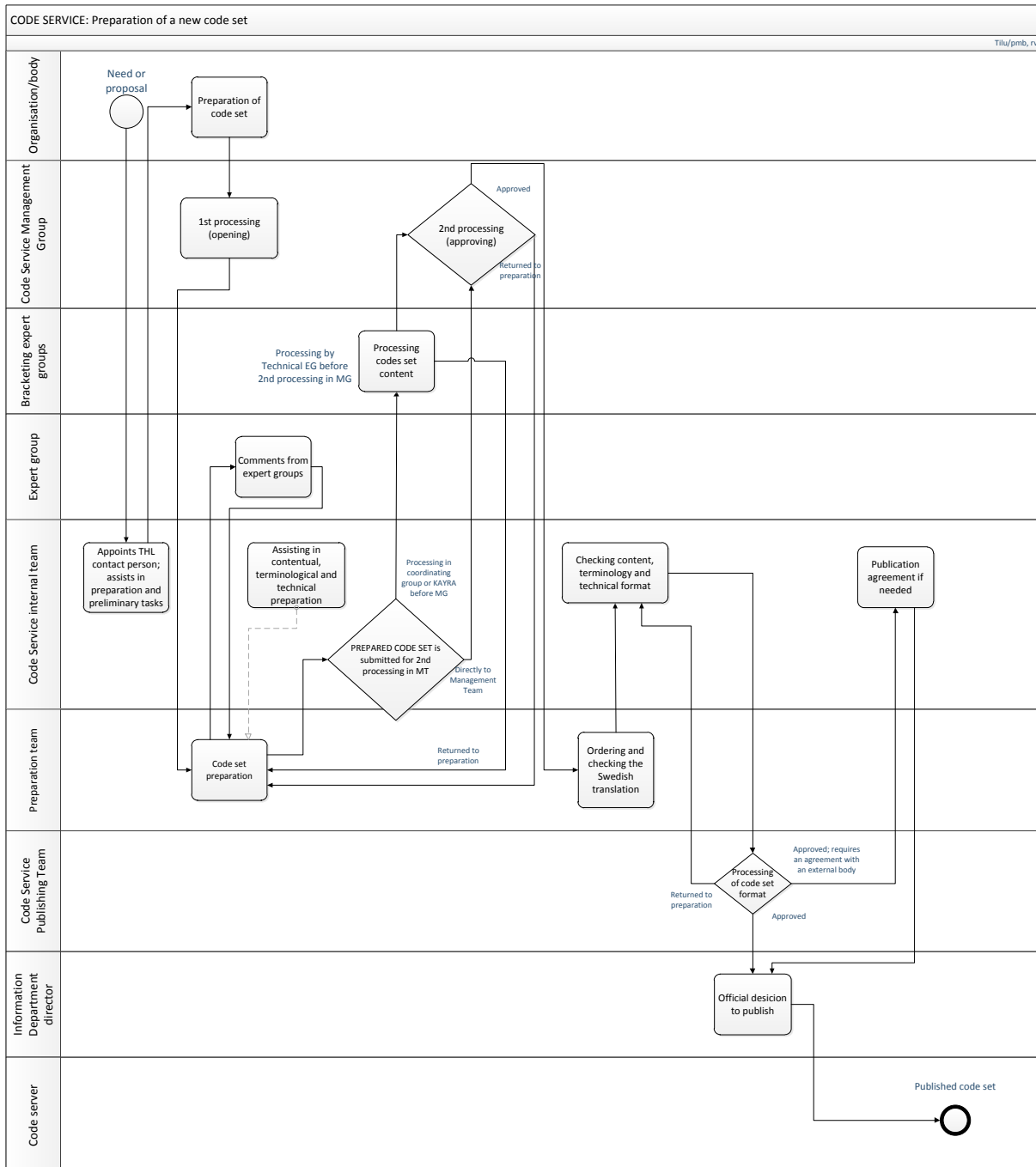


Image 12. The preparation of a new code set at the level of activities and roles.

Updating and maintenance of a published code set

Updating a published code set follows the core process 2 (see Image 3 on page 23). The code set is updated according to the maintenance plan and any user feedback if necessary. Updating includes a number of actions, such as replacing a single code with a new one, adding a new code or some other changes (e.g. revising the purpose). Updating also includes correcting any technical flaws detected in the code sets or reported to the Code Service.

Updating process

The updating process (Image 13) begins when the need for an update has been discovered either by a social and health care professional or, in most cases, by one of the Code Service expert groups. The THL contact person of the code set in question receives the information on the need for an update. The development manager of the Code Service directs the processing of updates, and the Code Service team can also assess the scope and need of the update in question.

Exceptions to this process include updates of the ICD-10 and procedure classifications which are always approved by the Code Service Management Group. Updates of the SOTE organisation register also differ slightly from the updates of other code products. Basically, there are three types of updates described as follows.

Extensive update

An extensive update of a code set is necessary when the following criteria are met:

- The use of a published code set is terminated.
- The purpose or contents (more than a third) of the code set is changed, e.g. name fields, data types, code set references or descriptions.
- A major change will have an impact on the use or usability of the code set.

Extensive updates are accepted by the Code Service Management Group and finalised for publication by the Quality Group. An extensive update usually requires processing by an expert group. Comments on the impact of the changes may also be requested from the representatives of the Code Service interest groups.

Basic update

Common criteria for basic updates are the following:

- the name, description or hierarchy of a single code in a published code set is revised;
- a single code in a published code set is combined with or added to another code;
- a single code is deleted from or added to a published code set; and
- Swedish translations are added to a published code set.

Basic updates are accepted by the Quality Group and the Code Service Management Group is informed about them. Processing of basic updates by an expert group may be considered as necessary.

Quality deviation and quick update

Any technical faults detected in published code sets are corrected as fast as possible with quick updates. Criteria for quick updates as quality deviations are:

- a prepared, urgent correction proposal for a published code set;
- a technical fault, typing error or other defect in a published code set generated by the code server; and

- adding the Swedish translation of a single code to a published code set.

In addition, the regular updates of the SOTE organisation register are made as quick updates. Quick updates are reported in the Quality Group, and anyone who reported a quality deviation will get feedback on correcting the fault.

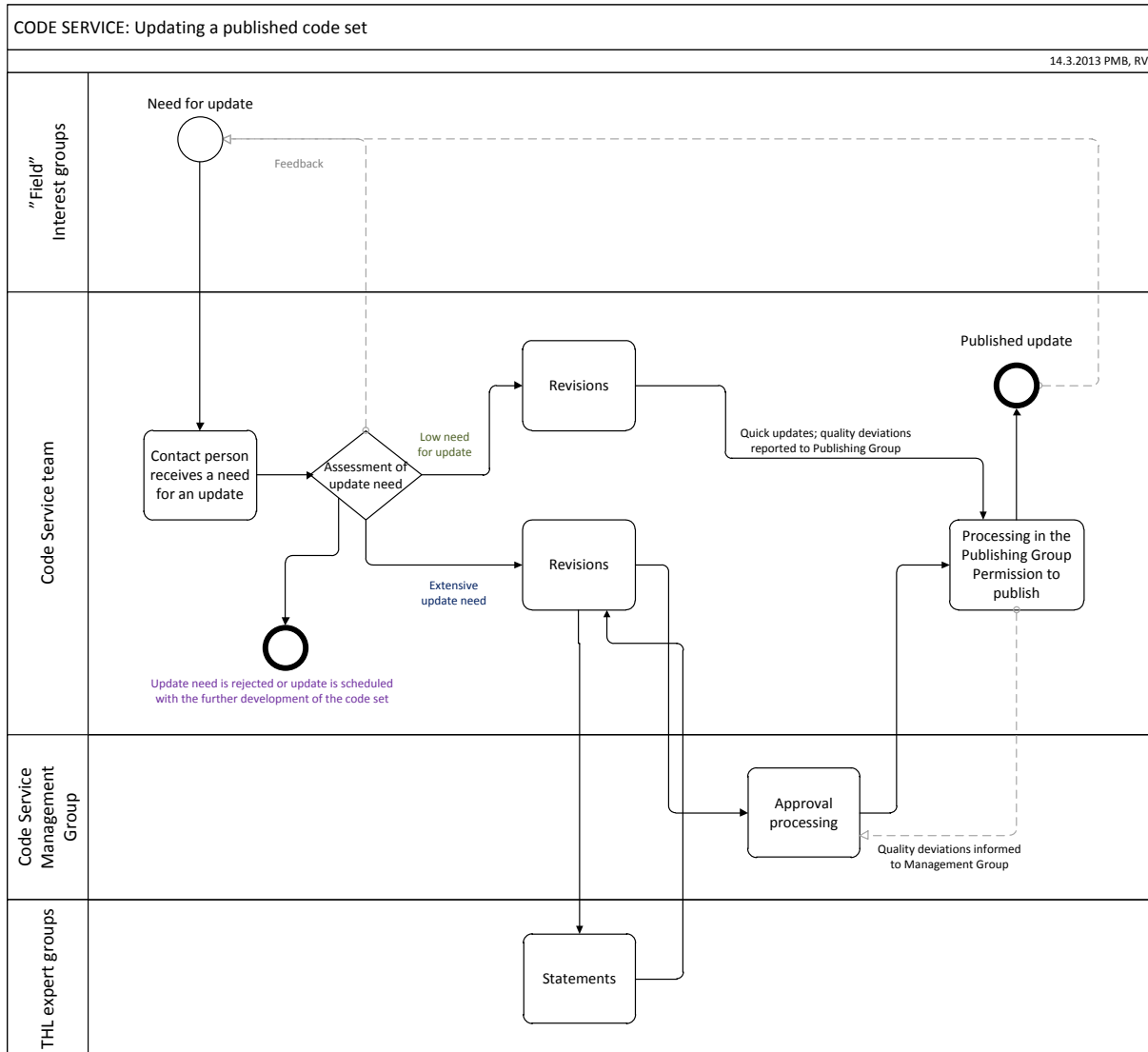


Image 13. Updating a published code set.

Code set information management

The metadata (Image 14) of the published code set is collected as part of the Code Service information management (cf. Attachment 4). The metadata can be used for purposes such as checking the purpose and environment of the code set, alleviating the maintenance of the code set and defining its relation with other code sets and expert groups. The version history of the code set is also specified in the metadata form.

Each published code set has an ISO Object Identifier (IOD¹⁸) that also serves as the foreign key (FK) of the code set in its description. Correspondingly, the data field of each code set has its own IOD (data field

¹⁸ OID in Finnish (cf. Image 14)

IOD) that also serves as the identifier of a single code. In Image 14, the metadata of code sets are shown as part of the Code Service Information Management Service that specifies the document management related to code sets, groups of code sets, their respective expert groups and the life cycle of code sets.

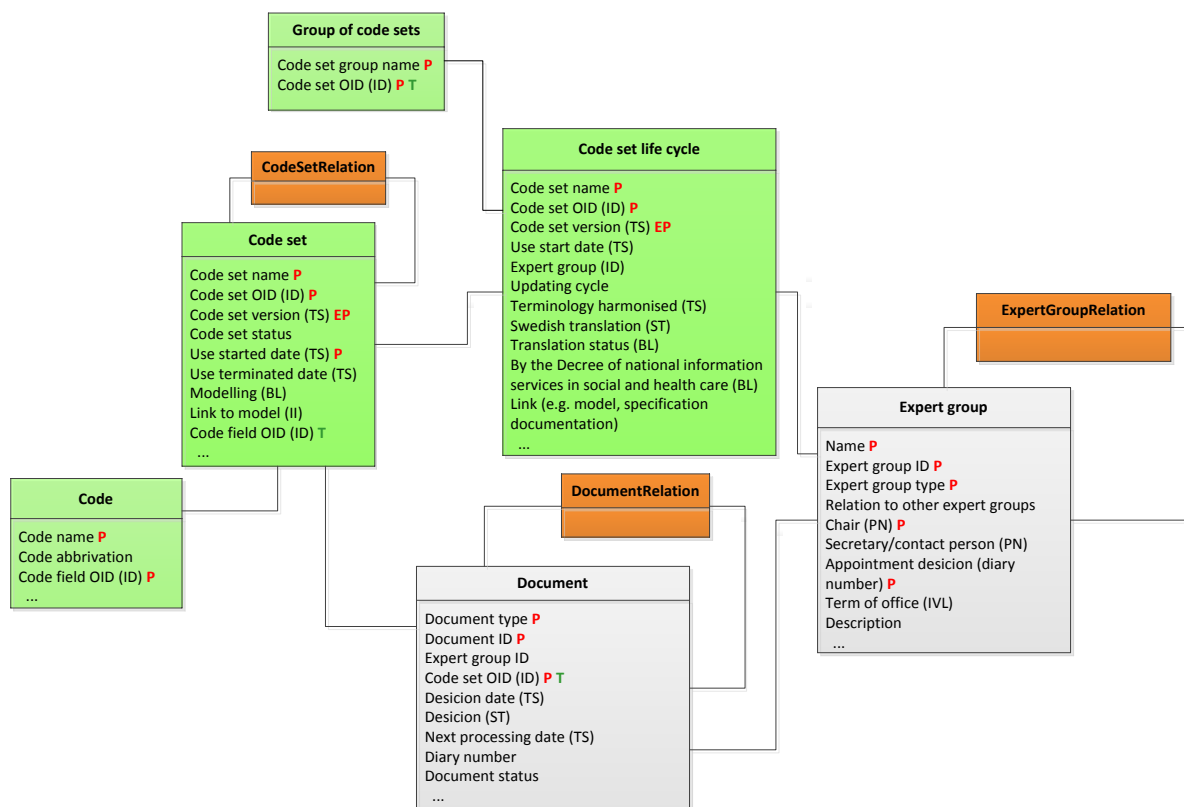


Image 14. Metadata of code sets and relations between code sets from the perspective of data management and ERPs (P=obligatory, T=recurrent).

Steering and development of the code service process

In the development of the preparation process of code sets, the goal is to move from quality assurance to quality control, which will better support the preparer's work during the process, emphasises the significance of expert group work and clarify the relations between various groups. The role of expert groups in code set preparation is to act as expert of their respective fields and represent their organisations. The environment of the use of national code sets is wide, and the implementation of code set always has cost effects. Accommodating the needs of the user groups at the preparation phase will increase the functionality and usability of the code sets. This is why expert group activities are necessary in the preparation phase to survey customer needs and control the quality of the code set under preparation. As the preparation work is administratively demanding and complex, it takes a lot of resources, which is why the roles and tasks of the various groups need to be clarified.

In addition, significant customer needs need to be taken in to account in the preparation; the publication of code sets has to be swift enough, and a reasonable delivery cycle has to be taken into account in the preparation work. From the quality control perspective, this means that the preparation criteria and urgency rating of the Code Service must already be observed during the process, not at the post-preparation inspection. It will make expert group work easier and move the focus of the code set process towards quality control.

Focusing on quality control will also intensify the Code Service administration process, as the code set and update proposals will be more systematically prepared for the administrative approval process. This will decrease the number of non-value driving necessary processes and process loss in relation to value driving processes. The change of focus is directly connected to the internal resource effects of the process.

Value and added value driving processes

Code products are outputs of the code service process, and this publication discusses their preparation and development. Generally, the result of any process is an output that has a certain value for customers and interest groups. Added value is created when the output exceeds customer expectations. Qualities that create added value to the owner and/or customer can be identified in a functional process. An example of an activity that creates added value is an activity that the customer is ready to pay for, that changes the form, suitability or function of an output or service and that is performed correctly at the first time.

From the perspective of the Code Service development, it is necessary to study which processing phase creates added value to the customer and how the code service process could be developed with regard to this. Moving the focus from quality assurance to quality control will also provide an opportunity to observe process loss and react to it as part of the development of the process and the assessment of added value. For example, providing an anticipatory processing schedule to the customer and the criteria of the various process phases create added value to the Code Service customers.

Process loss

Process loss can be divided into non-value driving, necessary process phases and the resource loss caused by inefficient process phases. Non-added value driving but necessary activity is something that the customer is not ready to pay for but which cannot be removed from the process or which is based statutory regulations or the law. An example of a non-added value driving but necessary activity in the code service process is the share of the administrative process. In other words, process loss that increases production costs and slows down the process without creating value or added value to the customer. From the perspective of process development (Moisio 2012), process loss can be decreased by improving process capability, reducing production costs and increasing the delivery speed of the products. Process

development or decreasing the loss begins with an analysis of the present state, in other words, identifying problems and analysing their causes. After this it is possible to make corrections and develop the process (Image 15).

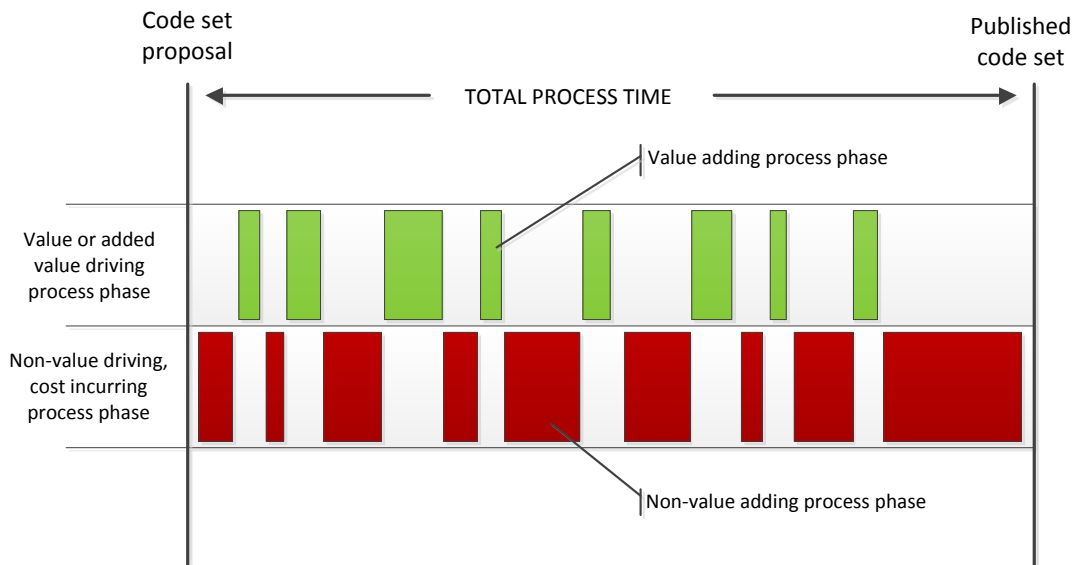


Image 15. In process development, the goal is to decrease non-value driving process phases (Moisio 2012).

From the **employee's** perspective, loss can be caused by unnecessary travelling and decentralised resources, vague tasks and goals, lack of authority or supervision, insufficient information and waiting, such as long delivery cycles interruptions and delays in testing and approval. In the code service process, a typical situation is prolonged preparation if the roles and responsibilities of the preparers are not clear to all parties. In such a situation, the preparation will not proceed according to schedule. In a prolonged preparation, the decentralisation of resources and preparation will be a problem.

From the perspective of **the entire process**, loss can be caused by interface and data transfer problems, lack of uniformity, time spent on unofficial processes and their resourcing, uneven workflow when half-finished products and orders are piling between work phases, process conflicts, strategy flaws, quality control flaws, additional processing needs caused by maintenance, long delivery cycles and unnecessary processing as well as over-processing such as multiple reporting, dissemination of false information and inaccurate process planning. In the Code Service, a typical process problem is usually related to the progress of the processing, informing and the preparer's uncertainty of what should be ready at which phase. In addition, synchronising the publications specifying the use of many inter-related code sets and the administrative process of the preparation projects of code sets requires resources. This can be enhanced by effective customer feedback and the identification and description of various specification publications.

From the perspective of **the output**, process loss can be caused by mistakes that are evident in the identification and processing of exceptions, the specification of corrective actions, sending unfinished products forward, lost files, factual errors, expensive corrections and customer dissatisfaction. Process loss can also be caused by the low use of resources, which shows in uneven workloads, high absence rate and staff turnover, weak competence classification, unreached goals and low input in development projects. In the Code Service, this can be evident in mistakes in published code sets and their expensive, resource-requiring corrections afterwards. The problem for the customer at this point will be the lack of shared feedback channels.

Process indicators

Process indicators are described in the chapters *Preparation of a new code set* and *Updating and maintenance of a published code set* in the context of describing the code service process. Process indicators can be divided into two groups: indicators related to the process steering and monitoring, and strategic indicators that measure the process output. Process indicators can be used to monitor the completion of the various phases and tasks of the process with described processing criteria. The goal is to make the process more effective with the indicators, not just to evaluate the quality of its output. Indicators evaluating the process output are used to monitor the achievement of the desired outcome with methods such as customer satisfaction surveys. In addition, a process can be steered with reactive indicators that measure the value and added value created by the process to the customers. Such indicators can be related to factors such as quality, time, costs, public image and reputation.

Quality control points serve as anticipatory process indicators for the Code Service, and they can be used to allocate resources to the bottlenecks of the process. In addition, the number of published code sets and quality deviations can be used as process performance indicators.

Strategic indicators

The strategic indicators of the Code Service are based on the THL strategy. The core values of the THL strategy are effectiveness, partnership, responsibility and independence. From the Code Service perspective, effectiveness means up-to-date, correct and usable code sets and meeting customer needs; partnership means accommodating interest group needs in the code set preparation; responsibility means the maintenance of the code sets; and independence means being independent of individual standards and solutions. The transparency of the code service process supports the responsibility and independence of the activities.

THL's effectiveness goals also contain the following facts that can be used to measure the Code Service activities and achievement of goals: THL decreases health and welfare differences by promoting services intended for the whole population; information produced and collected by THL is available, free and efficiently used; and the products and materials based on THL's information resources are up-to-date, of a high quality and meet the customers' needs.

Quality indicators

The quality control in the Code Service is conducted with activities such as the measurement points of the urgency rating selected for the code set preparation, since the most important measurement point for the publication of code sets is the time spent for the preparation until publication. The quality control of the code service process can be done by monitoring at every measuring point if the preparation has been in schedule. The measurement begins when a THL contact person has been appointed for the code set proposal. The measuring points are as follows: 1) The code set has been accepted as a preliminary project at the first processing of the Code Service Management Group. 2) The code set has been accepted at the second processing of the Code Service to be prepared for publication. 3) The code set has been accepted by the Quality Group of the Code Service. 4) The permission to publish has been signed. 5) The code set has been downloaded on the code server and it has moved to the life cycle management model.

If it is discovered at the code service process monitoring that the preparation has not followed the schedule according to the selected urgency rating, the Code Service information management system automatically sends a request for information to the code set owner and a notice to the Code Service contact person appointed for the code set preparation. The contact person informs about the quality deviation to the Code Service team in the Code Service Publishing Group that then decides on the necessary actions. Further information can be requested from the body responsible for the preparation in matter such as delayed publication. If the quality deviation is caused by dysfunction in the code service process, the Code Service can anticipate situations with indicators and follow matters such as the number and nature of quality deviations.

Part III: Development needs and conclusion

Further actions

Meeting customer needs

This publication was prompted by customer feedback related to uncertainty about code set preparation and details of the code service process. Customers have wished for more agile and profit responsible publishing of new code sets and updating of published code sets. This publication identifies customer needs more accurately and describes actions to react to those needs more efficiently than before.

Development goals

The needs and further actions related to the development of the Code Service activities are shown in Table 1. The necessary actions have been divided into four groups. The first group consists of the public enterprise architecture development that concerns the activities of the entire Information Department and, in the Code Service, particularly data modelling and the development of annual cycle for releases. The second group includes the development projects in the preparation of the National Archive of Health Information (KanTa), among which the ones related to the Code Service are the description of the KanTa change management process and the preparation of the management model of the national specification documents. The internal development projects in the third group refer to the internal development of the Information Department that from the Code Service perspective covers the intensification of the code service processes, information management and publishing procedure. The fourth group includes other necessary further actions for the Code Service, such as the normalisation of the contents and use of the Code Service forms and the description of the change management process or a more accurate maintenance process at the Code Service. Many of the needs listed above are interlinked.

Table 1. Development projects and further actions.

	Description	Interest groups	Prioritisation*	Preparation responsibility
Development projects related to the public enterprise architecture development				
Data modelling	Start of the modelling of data specifications for health care and its matching with the social welfare modelling	Public enterprise architecture development; social welfare modelling; code sets produced in the Action Programme on eServices and eDemocracy (SADe)		Unit for the Operational Management of Health and Welfare Information (OPER), the Information Structures and Classifications Unit (TILU), Code Service
Release packages and development of annual cycle	Inclusion of release thinking in the publication of code set products	All interest groups		OPER
Development projects related to the KanTa preparation				
KanTa: change management	KanTa change management as part of THL public enterprise architecture development	Kela (technical errors), users (patient information systems), THL (updates of contents and specifications)	in preparation 2012-2013	Information Department / OPER
Management model of nationally steering specification publications	Specification of identifiers and management of specification documents related to code set preparation		started in 2013	Information Department / OPER
Internal development projects				
Intensification of code service process and indicators	Specification and intensification of the code service process continues on the basis of received feedback	TILU; particularly Code Service	continuous, with annual measuring points	Information Department, Code Service
Use of code service process monitoring and measurement results	Monitoring of the information received from the process and quality indicators and its accommodation in the everyday activities of the Code Service team	Part of internal change management	started in 3/2013	TILU
Role of the expert groups	Clarification of the roles and responsibilities of the expert groups as part of the life cycle management of code sets	Part of internal change management	started in 04/2013	Code Service
Code Service information management system	Planning and commissioning of the information management system	Information Department	planning started 02/2013	TILU

Further actions

Development of Code Service publications	Clarification of publication and information	Information Department	started with the clarification of the contents of the Code Service website	Code Service
Collection and processing of customer feedback	Intensification of customer feedback collection and description of the process	Information Department		Information Department
Technical development of the code server	Includes technical development, improving of usability and clarification of the descriptions of the code server formats	Part of continuous internal development		TILU
Other further actions				
Normalisation of Code Service forms	Starting the collection of the information required by information management	Code Service interest groups, presenting officials of preliminary projects and code set owners	autumn 2013	Code Service
Description of the Code Service change management model	Describing at a task level a process for the identification and implementation of change and update proposals	Code Service customers and interest groups	2013–14	Code Service

*Prioritisation described as far as it belongs to the Code Service area of responsibility.

Conclusion

This publication describes the principles, core activities, goals, operational environment and interest groups of the Code Service. The code service process is described from two slightly different perspectives. The first, the administrative perspective introduces the administrative groups and expert groups of the Code Service and their work processes. The second, the code set preparer's perspective introduces the life cycle of a code set from preparation to publication, maintenance and updating.

In addition to the descriptions of the Code Service core functions, the publication discusses quality assurance and the development of process steering and related indicators. In this area, the most significant contribution is the customer promise about the progress time of the preparation of a new code set. This will enable the preparer to better manage the work tasks and scheduling at the different phases of the preparation. The criteria for the various preparation phases will also serve as checklists for the preparer. The criteria and urgency rating that create added value to the customer will also increase the transparency of the processes of the Code Service and this way improve process quality and promote the appropriate use of resources by enabling the monitoring of the target schedules of code set preparation and updates. All this will advance the specification of the code product, i.e. the output of Code Service preparation and maintenance processes, which in turn will facilitate the harmonisation of code sets. Harmonisation of code sets in this context means the inspection of code set contents, deletion of overlapping specifications and revision of terminology. The code service process will also become more efficient when the significance of expert group processing is clarified by measures such as specifying the working methods and hierarchies of the expert groups.

The internal and direct further actions of the Code Service are the normalisation of the process and its criteria described in this publication in everyday operation. The Information Department will be in charge of the planning and commissioning of the Code Service information management system. Other further actions include the development of the code service process, intensification of the Code Service management process and collecting and processing related customer feedback.

The development of the code service process will also require critical examination in future. We therefore welcome feedback and development ideas from our readers to make this publication more accurate and the process more efficient. The description of the code service process will be published in print and in an electronic form so that it can be updated as necessary.

Attachment 1: Preliminary project form

CODE SET PROPOSAL FORM / First processing by the Code Service Management Group

1	Name of project		
2	Processing number (filled in by Code Service)		
3	Owner (preparation responsibility)		
4	Description of purpose		
5a	Reasons for need		
5b	Legal provision that the preparation is related to		
5c	Operational environment and process		
5d	User group		
6a	Related to other code sets?	Yes	
6b		No	
7	Contact person at Code Service		
8	Expert group(s) processing and other necessary statements		
9a	Preparation costs		
9b	Sponsor, if not the owner		
10	Estimated preparation schedule		
11	Tentative maintenance description		
12	Further information		
13	Attachments		
Processing by the Code Service Management Group			
14 a	Approved		Date:
14 b	Approved with amendments		Necessary amendments:
14 c	Rejected		Reasons for rejection:
15	Urgency rate		

Instructions for filling the form

- 1 Name of the code set or classification proposal in the preparation project.
- 2 The Code Service gives the project an identifier that consists of the processing date of the project and the section of the minutes, e.g. kp20120221p5. The Code Service fills this in as all the other **light blue** fields.
- 3 An owner candidate has been appointed for the code set in preparation, and the owner will also convene the preparation team. The owner also presents the project. If the owner is not from the Code Service, a contact person from the Code Service will also be appointed for the preparation (Item 7).
- 4 Description of purpose describes the main points of the purpose and contents of the code set in preparation.

- 5a Reasons for need refer to the significance of the code set at a national or international level, for example. The reason for a code set can also be a law (more specifically in Item 4b), user group or a nationally significant project. See Item 10, where the owner may propose an urgency rating for the preparation.
- 5b Any legal provision that provides a reason for the code set in preparation in addition to Item 4a.
- 5c Special features of the operational environment and process of the code set and any special needs that must be accommodated in the preparation.
- 5d Description of the user group (customer) of the code set in preparation.
- 6 a-b Description of the relations and hierarchical status of the code set with other existing code sets or those in preparation and a specification of its interoperability. If you select Yes, describe the code sets or classifications related to or entirely or partly congruent with the code set in question. If the code set in question will replace an earlier code set or classification, name the publication here and describe the need for replacement in the reasons for need. If necessary, also describe the relations with external (not maintained by the Code Service) and international code sets or classifications. If you select No, give the reasons in the empty field.
- 7 The Code Service Management Group will appoint a contact person for the project.
- 8 The Code Service Management Group will accept the expert groups whose statements will be necessary in the preparation of the contents before the code set is accepted.
- 9a The owner gives an estimate of the project costs. In case of an internal preparation at the Code Service, the costs can be estimated as person-hours.
- 9b If the owner is not from the Code Service, give the name of the organisation responsible for the costs of the project.
- 10 An estimate of the preparation schedule and, if necessary, reasons for the assumed urgency rating.
- 11 A tentative maintenance plan. This entails that the life cycle management of the code set or classification has been planned (including reasons for termination or updating).
- 12 Any necessary further information and/or reasons.
- 13 Any attachments to the project are numbered and listed here.
- 14a-c, 15 Filled in by the secretary of the Code Service Management Group.

A copy will be sent to the owner and the data will be entered in the Code Service Information Management System when the form has been filled in after the processing by the Code Service Management Group.

Attachment 2: Preparation phase form

APPROVAL PROCESS FORM / Second processing by the Code Service Management Group

1	Official name of the code set	
2a	Processing number	
2b	Date of first processing	
3	Owner (preparation responsibility)	
4	Extracts from the minutes and other statements by expert group(s)	
5a	Amendments made after first processing	
5b	Amendments made on the basis of processing by expert groups or other evaluating bodies	
6	Translation	Estimated date of completion
7	Life cycle management	
8a	Maintenance responsibility	
8b	Update cycle	
8c	Update costs	
9	Code server format as attachment	
10	Modelling	
11	Usability assessment and/or piloting	
12	Incorporeal rights	
13	Further information	
Second processing by the Code Service Management Group		
14a	Approved	
14b	Approved with amendments	Necessary amendments:
14c	Returned to preparation	Reasons for returning to preparation:
15	Estimated date for Quality Group processing	

Instructions for filling the form

- 1 The official name of the code set according to the code set instructions of the Code Service.
- 2a Same processing number as in the preparation phase, i.e. the original document identifier.
- 2b Date when the code set was accepted for preparation by the Code Service Management Group.
- 3 Contact person of the owner organisation of the project who is responsible for the progress of the publication of the code set according to the agreed schedule (Item 3 in the Preliminary project form).
- 4 Extracts from the minutes of the expert group(s) appointed in the first processing where the code set or classification has been discussed, and other statements. The extracts may be attached to this form if necessary.

5a Describe here the amendments made in the code set or classification on the basis of the first processing by the Code Service Management Group. Use a separate attachment if necessary.

5b Describe here the amendments made in the code set or classification on the basis of the comments by the expert group(s). Use a separate attachment if necessary.

6 The owner (specified in Item 3 in the Preliminary project form) is responsible for the translation. National code sets must be translated in Swedish at least, and this can only be done when any amendments have been made and before the Quality Group processing. Enter here the estimated schedule, completion date, orderer and payer of the Swedish translation. The Swedish translation will also be inspected by the Publishing Group of the Code Service, and translations in any other languages are produced as necessary.

7 The life cycle management data includes update criteria and cycle as well as deletion criteria.

8a The expert group that takes the maintenance responsibility. A person's name if necessary.

8b The update cycle consists of the periodic update need, such as once a year, once in two years or when needed. If necessary, provide a more specific update cycle as an attachment.

8c Estimated costs of the updates of the code set and reasons for the costs if necessary.

9 A code set, classification, data structure or other coded content has been converted into the desired code server format, the template and instructions of which are available at the Code Service website¹⁹. The instructions include necessary data structures and data types. The Code Service team will assist in the preparation if necessary.

10 Modelling can be a conceptual model, hierarchical model or data model of the code set or classification under preparation (attached).

11 Usability assessment and/or piloting can be done during the preparation of the data structure.

12 Describe the incorporeal rights related to the code set or classification and, if necessary, need for a publication agreement and its parties (contact data).

13 Any further information

14-15 Filled in by THL

¹⁹ <http://www.thl.fi/koodistopalvelu>

Attachment 3: Metadata form for the expert groups

METADATA OF THE CODE SERVICE EXPERT GROUP

1	Name of the expert group	
2	Diary number of the set-up decision	
3	Term of office	
4	Contact data of the chair	
5	Contact data of the secretary	
6	Hierarchical status versus other expert groups	
7	Area of responsibility	
8a	Code sets and classifications that the group decides on	
8b	Code sets and classifications of which the group has maintenance responsibility	
8c	Other tasks	
9	Cooperation bodies	
10	Presentation responsibility	
11	Information dissemination (by whom and to whom)	
12	Further information	

Instructions for filling the form

- 1 Name of the expert group
- 2 Diary number of the set-up decision of the expert group
- 3 Term of office of the expert group
- 4 Contact data of the chair of the expert group.
- 5 Contact data of the secretary of the expert group.
- 6 The status or relationship of the expert group with other expert groups.
- 7 Description of the area of responsibility of the expert group. A reference to applicable law if the expert group's operation is based on law.
- 8a List here the code sets and classifications the contents of which the group can **decide on** (reject/accept). This only applies to coordinating expert groups.
- 8b List the code sets and classifications the maintenance of which the group has been appointed to be responsible. This applies to all expert groups.
- 8c A description of any other tasks assigned to the expert group.
- 9 Main interest groups of the expert group.
- 10 Hierarchy between the expert groups.
- 11 Person or body responsible for information dissemination and the main target groups.
- 12 Any further information.

Attachment 4: Metadata form of a published code set

METADATA OF A CODE SET PUBLISHED ON THE CODE SERVER

1	Name of code set	
2a	Code set OID	
2b	Versioning history	
3	Date of the latest version	
4	Reference to the minutes of the Code Service Management Group	
5	Responsible expert group	
6	THL contact person	
7a	Update cycle	
7b	Description of amendment	
8	Environment	
9	Semantic compatibility	
10	Modelling	
11	Status of terminology	
12	Inspection / date	
13	Status of the Swedish translation	

Instructions for filling the form

1 Full name of the code set.

2a-b Identifier of the accepted code set or the process identifier of a code set in preparation and any versioning of the code set.

3 Latest version of the accepted code set (date).

4 Reference to the minutes of the Code Service Management Group where accepted.

5 Expert group responsible for the monitoring and content development of the code set.

6 THL contact person is the secretary of the expert group mentioned above. In some cases the contact person can be someone responsible for the life cycle management of the classification in question.

7a-b Update cycle and description of a necessary/implemented amendment.

8 Describe here the context where the data structure will be used (e.g. health and treatment plan in social and health care, THL Care Register for Health Care (HILMO) etc.).

9 The relations of the code set with other code sets and classifications.

10 Any modelling (conceptual, hierarchical, data or other model) as attachment.

11 The status of the terminology of the published code set or classification (terminological harmonisation done / not done).

12 Inspection date of the published code set or classification.

13 Status of the Swedish (or other language) translation of the published code set or classification.

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