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Assessing Usability of a Self-Produced Translation
for Multinational Target Audience

A Case Study

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ABSTRACT:

Tässä pro gradu -tutkielmassa tarkastelin käyttäjäkeskeisen kääntämisen (UCT) iteratiivisen käännösprosessin hyödyntämistä omassa käännöstyössäni. Käyttäjäkeskeisen käännösmenetelmän työkaluilla kykenin tehokkaasti suunnittelemaan ja luomaan helposti lähestyttävän teknisen alan testiraportin. Testiraportti on suunnattu Euroopan markkinoille, jossa kohdeyleisö koostuu eri kansallisuuksista ja on saatavilla jokaiselle. Sen vuoksi käännöksen on oltava ymmärrettävyydeltään yksinkertainen ja selkeä kenelle tahansa. Käännösasiakkaan, persoonien ja kohdeyleisön edustajien palautteet korostivat käännöksen käytettävyysongelmia. Tässä tutkielmassa käännän testiraportin kerran ja sen jälkeen tutkin, kuinka käytettävyyttä voidaan parantaa palautteen perusteella.

Ensimmäisen kerran käännän testiraportin käyttäen apuna itse luomiani persoonia, jotka edustavat kansainvälistä kohdeyleisöä. Lisäksi ensimmäinen käännösversio pohjautuu tekniikan alan standardiin Simplified Technical English, jonka tarkoitus on yksinkertaistaa englannin kieltä. Toisessa käännösversiossa käännösstrategia pohjautuu Vinay ja Darbelnet'n käännösmenetelmiin kirjaimellisen ja vapaan kääntämisen näkökulmasta. Toisessa käännösversiossa huomioin luokitteluista lainaamisen, käännöslainan, sanasanaisen käännöksen, transposition ja modulaation.

Tutkimuksessa selvisi, että käyttäjäkeskeisen kääntämisen iteratiiviset heuristiset arvioinnit ovat erittäin hyödyllisiä vastaanottajan kannalta. Jokainen arviointi ja palaute nosti esiin uuden näkökulman käytettävyyden parantamisen kannalta. Lisäksi yhdistämällä osia käyttäjäkeskeisen kääntämisen eri työkaluista pystyin käännöstyössä fokusoimaan eri asioihin – tämä ei vaatinut aikaa mutta ehkä vähän vaivaa.

1 INTRODUCTION

The primary aim of this case study is to see how using the methods offered by user-centered translation (UCT) affect the usability of a translation of in a small-scale translation project. The translation process consists of a self-translated test report (from Finnish into English) while using iteratively an analysis of the end-user and an assessment of the usability of the translation. The translation should suit a wide and public international target audience of the target text.

The terminology of the test report relates to temperature behavior in the field of roofing construction. The test report's topic is testing a temperature behavior of a snow guard bonding. Snow guards are safety products that stop precipitation of ice and snow from rooftops to the passages underneath. The translation is done for Kulo Snow Guards Ltd. which is a Finnish roof protection company. Kulo Snow Guards produces, sells and installs snow guards in the Nordic region. Their marketing has widened around Europe, thus they need the test report in English for the trading in the European Economic Area (EEA).

The client of this study does not have a company-specific terminology for English translation because their trading area has until now been the Nordic countries. Such terminology would be utmost important for the client in the future. Therefore, the secondary aim of this study is to create a small company-specific English terminology for Kulo Snow Guards Ltd. With the terminology, the company will have the basis for their future translation projects. During the translation process, I will form the terms according to The Writing Rules and the Dictionary of a standard guideline in the technical field, Simplified Technical English (ASD-STE100).

However, the standard does not define a complete vocabulary on the roofing construction industry which is why the terms and concepts will also be developed on the basis of general dictionaries and other sources that use the native expressions in the construction industry. My research questions are: 1) How severe are the usability problems of the self-

produced translation, 2) How should the most severe usability problems be fixed and 3) In which manner does the usability affect the development of the terminology?

There are usability assessments done for localization purposes, for example, Jenni Riippa (2016) assessed in her master's thesis the usability of a localized Finnish website. Anni Otava (2013) run three usability tests in her master's thesis via different UCT tools. Especially interesting is the case study of the mental model tool. She observed a translation process in nonfiction translation where the translator used the implied reader. Otava (2013: 42) analyzed the tool is suitable in translating when lacking the information on the TT receiver. These usability tests were run according to different translation processes with separate UCT tools.

In this study, I will produce a translation myself and run the entire set of the UCT methods on this self-produced translation. The tools are meant to use either alone or together and preferably the tools should be modified for the subject matter (Suojanen et al. 2015: 135). Because the tools are designed to be used also alone, they overlap together. This enables to modify the models to suit the specific context and the timeframe of the study. I will gather information on the user through a specification, intratextual reader positions, personas, and a questionnaire. I will enhance the usability via a list of heuristics and the questionnaire as well.

User-Centered Translation is a relatively new tool in Translation Studies and has recently received considerable attention in Finland and abroad. In UCT, Suojanen, Koskinen, and Tuominen (2015) present that an iterative quality evaluation on usability gives methods for the translator to form a specific idea of the text's user. Traditionally the translation assessment is done after finishing a translation work, but UCT works oppositely throughout the translation process. The users are analyzed, and the usability evaluated before the actual translation work starts. The analyzing of the users and evaluation of the text usability continues during and after the translation process with the aid of various tools. As a result, the recipient of the TT should be more pleased with the product and the translation work should be more efficient for the translator. (Suojanen et al. 2015: 1–2)

The two main concepts in UCT are usability and user experience. *Usability* refers to "the ease with which users can use a product to achieve their goals" (Suojanen et al. 2015: 2). There should not be any obstacles that hinder the usage of the text (ibid. 2015: 2). In other words, the text should follow the norms expected by the discourse community (Rahtu in Immonen et al. 2011). Furthermore, the most important feature of a text, i.e. legibility as Niemikorpi (1996: 33) emphasizes, should be transferred in the translation. The text should be understandable for the user so that they need less time to learn new things. For example, the TT test report must avoid ambiguous text structure to ease the reading process. The reader's knowledge effects on the translation choices especially regarding to the terminology. For example, because the text report is publicly available, most of the readers would not remember or fully understand the message if the test report would consist only of difficult words or complex sentence structures.

User experience as a concept pursues enjoyability in using the product. It is "a holistic concept encompassing issues such as aesthetics, fun, and pleasure" (Suojanen et al. 2015: 3). Translators should put themselves into other people's position and understand their emotions and reactions (Suojanen et al. 2015: 25). For example, the test report has a well-organized layout for easy reading experience which should be kept. Finding a certain detail is quick for the reader provided that correct formatting is followed. The level user experience and usability is studied via a questionnaire sent for external evaluators who present the expected target audience.

A third important concept is *user*. A user is not automatically considered as a reader in Translation Studies but UCT includes reader, receiver, audience and user into their concept of user, also referred to as the 'end-user'. In UCT, 'reading' is seen as using of the text. (Suojanen et al. 2015: 7) The solution to understand the user is to categorize the multiple characters of users and readers in the context where the translation will be used or read (ibid. 2015: 29–31). Therefore, in this study I have developed personas who represent the characteristics of user groups in four fictive archetypes of users.

The translation strategy chosen for the translation process is comparative stylistic analysis by Vinay and Darbelnet (1995). It gives tools to analyze the choices of stylistic decisions

made in moving from SL to TL. The comparative stylistic analysis is intended to localize the TL which in this study will be simplified English. A standard of controlled use of language acts as a support for translating in a neutralized and simple manner. Esselink (2000: 29) describes a controlled language as a subset of a natural language. The standard used in this study is a style guide of Simplified Technical English. The overall language flow in the test report should be more natural than in most technically written documents. Therefore, the guidelines of Simplified Technical English will be used as a support for the technical terms. With these methods is possible to accomplish the goal to develop the client's own company-specific glossary.

Simplified Technical English (ASD-STE100) is a standard whose purpose is to clarify complex sentence structures of English and minimize the number of meanings and synonyms which can confuse an international reader. Although ASD-STE100 is primarily meant for a multinational audience, native English readers are also included in the target group. The instructions are not only followed by technical writers but translators as well. ASD-STE100 consists of two parts, a set of Writing Rules and a Dictionary. They are meant to be used only in the context of written documents, although they might help oral communication, for example, in meetings. (STEMG 2017) From now on, to be clear, I will refer to the standard as the STE-guidelines.

In this study, I will discuss the translation process in the level of lexical, grammatical and stylistic meaning. These are the first steps towards transferring meanings from one language to another. Lexical meaning refers to words, i.e. lexical items. While I translate, I am especially interested in the connotation of a word, that is, the word's reflections to different meanings in different context of use. (Chesterman et al. 1979: 8) For example, in the first draft of the translation I relied merely on the STE-guidelines. Thus, when depicting the snow guard's original state, I translated it as 'condition' which according to the STE-guideline referred to 'the state of an item'. I received feedback from an expert in the construction industry who suggested the correct definition being 'shape'.

The grammatical meaning expresses the details inside a sentence. Thus, I need to analyze the word classes from both languages: the source language (SL) and target language (TL).

(Chesterman et al. 1979: 8–9) Analyzing which word class (for example, subject and finite verb) a lexical item in the SL test report represents will aid me to specify the correct medium of the test report. Medium indicates whether the language of the material is language for special purposes (LSP) or if it is standard language. Medium is a part of the stylistic meaning of translation.

When the stylistic meaning of text is well constructed, the text follows its most important function – the readability (Niemikorpi 1996: 33). The naturalness and legibility secure that the language is idiomatic, that is, natural. (Chesterman et al. 1979: 8) Readability has to do with the usability of the text, too. The user should not have any trouble while reading the text (Suojanen et al. 2015: 2). This is a qualitative feature of the test that includes also cohesion and terminological consistency. Furthermore, in the aspect of the usability, also the reader's technical reading skills, pre-existing knowledge and motivation effect on the text readability. (ibid. 2015: 53)

My personal interest in this subject is in my previous work efforts for the company as I have unofficially aided in getting the international co-operation started. The work included, for example, translating different documents and messages. I also have joined events and meetings as an interpreter. Although the tasks' nature has been unprofessional, it has also been important for the company's business. Nevertheless, having a possibility for practical translation during the studies is only useful. I have received a permission to use the test report material from the owner of the documents, the CEO of Kulo Snow Guards and from the author of the ST test report, the University of Applied Sciences of Seinäjoki, Finland.

In the following sections, I will present the material of this study in 1.1. and the methods of this study in 1.2. Furthermore, in section 1.3 I will describe briefly the location of the target audience, the topic of the translation, and the client of the translation. In chapter 2, I will present in detail the function of the test report, the translation strategy and the STE-guidelines. In chapter 3, I will present the methods of user-centered translation, and the evaluation tools crafted for this study: the questionnaire and the list of heuristics. In chapter 4, I will analyze the medium of the ST in order to find the intratextual reader

position. I will also discuss in chapter 4 the development of personas and the heuristic evaluation of the first draft and the second draft. Finally, in Conclusions I will summarize the results.

1.1 Material

The material of the study consists of one self-produced translation, a specification, questionnaire survey and a list of heuristics. During the translation process, the translation is iteratively enhanced by gathering information on the test report's users and usability. First, during the negotiations with the CEO of Kulo, i.e. the client of the self-produced translation, a detailed written specification is drafted. The specification has all the material about the client's wishes about the translation and the material on which the basic characteristics of the users are based. Second, the questionnaire survey acts as the usability testing of the translation. Participants will test the translation's usability. With the feedback, I will enhance the first translation draft. Finally, I will check the severity level of the second draft's usability by using a list of heuristics. With the material gained from the heuristic evaluation, I can furthermore enhance the translation.

The self-produced translation is a test report. A report is an official document written by a group of people who have examined a situation or problem (Oxford Advanced Dictionary 2018). Typically, a subject of a report can be anything between a travel report and a research report (Kankaanpää & Piehl 2011: 304). The report used in this study is a document that describe a technical durability test run in laboratory conditions. Therefore, I will refer to the document as a 'test report'. The test report's aim is to transmit explicit scientific information on the bonding method's durability properties in temperature variation. The test report's aim is also to send the message in a commonly understood, readable manner. All in all, the aim is to avoid misinterpretations in the product usage. The original test report is written in Finnish, which is the source language (SL) for my translation. Target language (TL) is English.

A group of scientists acts as the author of the ST test report. Their intention has been to document their observations for the public audience as they test a product's quality. The producer has thought about the intended receiver: the test report is written by a specialist for both experts and laymen. There are no explanations for the expert terminology. On the other hand, there are no extremely difficult concepts that a layman would have problems to understand. The structure is coherent as it should be in a scientific report. However, it is lengthy mostly because the test report includes vast pictures of the procedures. The coherency remains despite of the long structure because the pictures and charts communicate interactively with the informative body text, detailing the data. (Kankaanpää & Piehl 2011: 304–305)

Technical products require a qualification standard in Europe before being qualified for the markets of European Economic Area (EEA). Therefore, the products must be formally tested and documented. The language should be simple English so that all the receivers in different countries of EEA would understand it. In other words, the language must be suitable at the level of formality for the experts, but the information must be easily available for the laymen. The receiver will use the test report to gain safety information on the durability of the snow guard and it's bonding method. The test report also gives extra information in the further usage of the product, such as in the installation. Therefore, there is a need for the English translation of the test report.

The detailed written specification has important information on the client's experience in the requirements of the customers and the distributors of Kulo Snow Guards in the Nordic area. The client of the self-produced translation has a strong experience in the product's end users in the Nordic markets. The client meets customers, distributors, scientists and laymen in his work. Laymen refer to people to whom the construction industry is an unfamiliar field and whose first interest is not to seek information on the product. The client's work includes travelling around Finland and Sweden, which enables him to make diverse contacts concerning the snow guards. The client also organizes discussions and guidance workshops for the distributors. In addition, the client participates in various fairs, both national and international, which are convenient events to meet potential target audience representatives. This information on the users is gathered into the specification,

after which I divided the material into user groups. Later, with the help of mental models, I developed imaginary architypes of the users, so called personas.

Part of this study's translation process is complemented with empirical methods that consist of real users participating in a questionnaire. The participants represent a heterogeneous, ambiguous and unpredictable group. The end user's attitudes and preferences can be examined, for example, by formulating a questionnaire. (Suojanen et al. 2015: 93) The purpose of the questionnaire is to gather information about the end user's characteristics. The purpose is as well to have an assessment of the usability of the first draft. The questionnaire I developed for this study, is in appendices.

Questionnaire suits the best to this study's international target audience. This solution fits in the study's time frame and is not economically an obstacle. The participants are from different European countries, representing the international target audience. The participants can be usability experts or novices either in writing or in the subject in question (Suojanen et al. 2015: 130). It is recommended to have 3–5 external evaluators in a small-scale research (ibid. 2015: 80). This study's questionnaire has 4 participants.

The participants represent different characters. There is a Belgium manager, a Finnish scientist, a Finnish translator and a German teacher. The manager and the scientist are experts in the construction industry: one has worked in different international construction companies and the other produces and edits technical documentation. The translator and the teacher are laymen in the construction industry but are proficient in English language. Furthermore, I, as the translator of the test report, do not have any special experience in terminology relating construction industry.

The questionnaire measures the test report's usability in its textual features of readability, legibility and comprehensibility. That the reader of the test report understands the message, the translation should be comprehensible. Legibility consists of the technical and visual aspects of reading. That the reader of the test report does not have to struggle with the semantics, the translation's readability is adequately constructed. Readability means that the language is coherent and idiomatic. (Suojanen et al. 2015: 49–53)

Sentences should make sense and awkwardly constructed sentences should be avoided. (Brunette 2000: 174)

A second translator assessing the translation will pay attention to the linguistic problems. These problems could be omissions, incorrect terminology or failure to use the client's preferred terms, and paragraph divisions that are not suitable in the target language. (Mossop 2011: 137) A subject-matter expert may suggest alteration on the terminology and the phraseology into more specific terminology that is familiar to experts. A subject-matter expert of the test report is a representative of the construction industry and who reads and writes texts related to the field. Therefore, an expert can notice conceptual errors (Mossop 2011: 138). Thus, it is interesting to read the expert evaluators answers. Their knowledge on the field's terminology can make them require more exact vocabulary. When the evaluation is done by a non-translator who is proficient in language, their work is called editing or reviewing. They may suggest corrections for grammar errors and layout mistakes (ibid.: 138).

The list of usability heuristics crafted for this study is short because the translation process has many other parts for material collection of the user and the usability. In addition, the list of heuristics will be used in the future translations for Kulo Snow Guards. Therefore, less detailed heuristics is reasonable in everyday use (Smith 2008: 55). A key phrase 'guidelines' refers to company-specific terminology which in this study is replaced by STE-guidelines. As the user is a primary in the list of heuristics, the international target audience is considered first, as 'Match between translation and specification'. Next, the list of heuristics covers the conventions of the genre in 'Conventionalities'. It covers also some textual features when translating from Finnish into English in 'cohesion'.

1.2 Method

To implement an iterative quality assessment for the self-produced translation process, this study follows the entity of the methods of User-Centered Translation by Suojanen, et al. (2015). The theory applies three phases during the translation process: in the

beginning, in the middle, and at the end. At each phase the translation's usability will be evaluated, and the translation will be revised accordingly.

The first phase in the beginning of the translation process consist of defining a translation need, writing a specification, analyzing the function of the ST and choosing a translation strategy. With the self-collected material and with the mental models of UCT, I can develop personas that represent the end-user of the test report. The intratextual reader positions of the mental model enables the translator to collect material of the user from the ST. Therefore, the ST is analyzed carefully. I will translate the first draft with the aid of the STE-guidelines and with the aid of the developed personas. The aim is to highlight the blind spots as a novice translator – the feedback from the language experts in the questionnaire will emphasize the most problematic areas in the first draft that otherwise could be missed.

I will translate the second draft with the aid of the feedback from the questionnaire. Also, I will apply a translation strategy in the second draft's parts that received the most comments on the usability problems by the external evaluators. The comparative stylistic analysis by Vinay and Darbelnet (1995) is a strategy especially meant for translating into English. After the second draft is completed, I will evaluate its usability with a small list of heuristics that I will create. In addition, I will analyze the found usability problems by their level of severity in a scale from 0 to 4. Therefore, the questionnaire and the list of heuristics act as the evaluation phase in the middle of the translation process. In the end, Conclusion will act as a postmortem analysis which is an overview of the entire translation process.

To find an answer to the research questions, the self-produced evaluation tools highlights the problems. The received feedback and the severity rating scale will aid in the analysis. The main found problems in the translation related to the ST's complex sentence structures and the lacking information. In the first draft, there were usability problems on readability (coherence) and comprehensibility (cohesion). After the usability problems were fixed in the second draft, the remaining usability problems occurred in the readability which severity rating were from 0 to 2.

1.3 The target text audience and the topic of the translation

In this section I will shortly explain a snow load area that is the location of the target audience. Next, I will introduce the topic of the translation by presenting the snow guard. The idea is to open the terminology of the translation which is not completely familiar topic in general sense. Also, I will present shortly the client of the translation, that is, Kulo Snow Guards Ltd. Moreover, this section opens the terminology used in the description of the personas' interest in reading the test repot.

Topographic features affect the amount and the type of snowfall in different countries. Such terrain features can be altitude from sea level, geographical position and exposure to sunlight. In the Northern European countries snow covers larger areas for months per a calendar year. Ice and snow do occur all over Europe but in smaller areas than in the North. (Croce et al. 2016: 1–2) The European climatic regions of snow load cover a vast area which are the Alpine region, Central East, Central West, Greece, Iberian Peninsula, Mediterranean region, Norway, Sweden and Finland, UK and Republic of Ireland. (European Standard 2003: 38–39) Thus, the regions cover the transnational area of the target audience.

The purpose of snow guards is to prevent snow and ice falling from rooftops. The Kulo snow guards are molded of clear polycarbonate that is a solid plastic material. The material is UV stabilized to ensure that it maintains its characteristics in various weather conditions. Polycarbonate will not create a corrosive galvanic reaction on roof. Polycarbonate can endure high-temperature ratings. Because the material is transparent, the snow guards can be installed on, for example, glass and plexiglass roofs. (Kulo Snow Guards 2018)

The topic of the translation is measuring temperature behavior. The test is run on the snow guard model Satula. Satula is designed for a roof covering that suits to the model's wave-like shape, for example, a tile covering. In the test report the scientists tests the durability of a mounting method with Kulo1 bonding when the temperature varies from freeze to

thaw. They set a strain on the bond-attached snow guard in various temperatures. The strain is comparable with an average snow load capacity. The snow load varies in the different climatic regions but the most average of the highest snow load in the European region is 2,0 Newtons (N) per a square meter (m^2). This is an important detail that is needed in order to understand the results of the test report: one Satula endures 1,5 N/m^2 strain of snow load. The Satula snow guards must be installed by attaching four items per a square meter, therefore the installation endures 5000 N strain of snow load per square meter.

Kulo snow guards are designed to form a stable holding field across the roof. Their purpose is to balance the strain of the snow load, which means that the Kulo snow guards also protect the roof structure. Kulo snow guards retain snow masses around them until the drifted snow melts away. The construction legislation (Ministry of the Environment 2018) set the minimum strength conditions for the building's structure design to endure heavy snow loads, and thus prevent possible roof collapses. Before installing any snow guards, it is essential to ensure that the roof structure can bear snow load. (Kulo Snow Guards 2018)

2 THE SOURCE TEXT & THE TRANSLATION STRATEGY

The source text of this study is a technical document describing the durability of a bonding method on a snow guard in a temperature variation. The document's genre is report, into which I will refer to as a test report as its topic is a description of a scientific test. The test report's readership is aimed at receivers of both national (Finland) and international (the member countries of EU) readers. The original need for testing the product was to acquire material for marketing purposes on the European Economic Area (EEA). Thus, the test report is aimed already in the source language for such a wide audience. Importing or distributing a product in the EEA requires CE marking on the product. The regulations of CE marking require the form of writing to be such that the consumers, businesses and authorities easily understands the obligatory information on the product (EU-Regulation No 305/2011). Thus, the test report is intended for anyone to read.

The test report is a formal documentation of the product's durability. The text contains specific terminology but in a commonly understood manner. The body text is simple, but it contains complex sentence structures. The complex trivial information is only summarized in charts or tables. The test report is publicly available. Therefore, the target audience cannot consist merely of experts: terminology must be understandable also for laymen.

Vinay and Darbelnet's (1958/1995) translation strategy of comparative stylistic analysis is suitable for analyzing carefully the text features in the TL. The strategy gives methods to move from SL to TL with seven different procedures that changes either the syntactic form of a grammatical item or in the meaning of an expression (Palumbo 2009: 104). The strategy was originally developed for translating from French into English; therefore, it suits this study in which the translation is done from Finnish into English. The comparative stylistic analysis gives general methods to transfer language into English but the common translation mistakes that a Finnish translator might encounter remain vague. These translation problems are important to identify in the self-evaluation phase.

In this chapter I will elaborate the function of the source text and analyze the ST test report's lexical, grammatical and stylistic meanings. This repertoire consists of the genre, the analysis of the stylistic features and the language norms in the SL, i.e. Finnish. These are features of the text that the readers and speakers expect to find. The features are also important for the translator to recognize before heading off into translating. After introducing the source text, I will present the translation strategy of comparative stylistic analysis in detail. Finally, I will conclude this chapter by introducing the Writing Rules and the Dictionary of the standard guideline of Simplified Technical English.

2.1 The function of the test report

There are multiple preparation phases a translator needs to work before starting to translate. These practices lead the translator's decision-making on the function of their work – understanding the ST is the foundation of a translation process. Not only does the preparation cover an arrangement of the overall frame of the text but also a selection of the tiny individual elements of the vocabulary. In this subsection I introduce four preparation phases of a translation that relates to analyzing the source text. These phases include examining the language, the style and the genre used generally in document writing in the technical field, and simultaneously comparing the appearance of these features in the SL of the test report.

First, analyzing the genre of the source text steers translating because it specifies important features of the text, such as the text style. Second, a translator must understand the topic of the communication in question and analyze the manners of the target texts' user. Solving the target audience's expectations on the subject aids the translator to choose a suitable translation strategy. (Rahtu 2011) A suitable translation strategy provides rules and principles for the translator to reach their translation goals (Jääskeläinen 1993: 116). Third, acknowledging the receiver of the translation correlates with choosing a correct vocabulary into TT. Fourth, analyzing the style of the ST yields more detailed results on the text structure and language. The text's style directs, for

example, the translator to select of using either standard or special purpose language in the TT. (Rahtu in Immonen et al. 2011)

2.1.1 Test report as a genre

Genre is full of nuances, and therefore it is one of the most important features for the translator to analyze in a text. Genre indicates the text's structure, terminology and style. These features specify the producer and the interpreter of the message. (Rahtu 2011: 12). In the test report, the text content is a description of a research. The structure follows a typical report. The terminology and style are common in the technical field. Therefore, the genre of this study's translation material is report. Genre reflects the text's producer's aims, methods and the receiver's assumptions (Rahtu 2011: 13). Report is meant to be readable and they are structured to be visual. Readability and visuality are indicated, for example, with headings, charts and pictures (Kankaanpää & Piehl 2011: 305)

Usually, each genre has its individual, recognizable conventions: formal patterns, a function and a terminology. (Vehmas-Lehto 2011) However, the boundaries between genres are thin and changeable in a discourse community. There are multiple levels in the members' abilities to produce and interpret texts due to different biographies. This causes inevitably divergent expectations for an individual text. The expectations and interpretations divide genres into hierarchal relation between higher and lower genres. The border between the similar genres is so fine that the lower parts can overlap each other. (Rahtu 2011: 13–15; Swales 1990: 54–55) Primarily, the test report was intended for Kulo to signify a researched based foundation for their new product's safety and durability qualities. On the other hand, the test report was also intended for the company to practice as an additional material for consumers. Notwithstanding the test report's structure clearly indicates a common style of technical documentation; their message is universal. These intentions draw a fine line between an expert and a general utilization of the text.

A good example of a speech community member's characteristics is their division into their own subgroups of text interpreters. A group might interpret a text as a report because

they analyze the text by its narrative of describing events. Another group believes the text is an account. Both text styles are different but alike genres. Report as a genre includes a description of an event that one has observed, heard, done, or investigated. It can also include an announcement or an overview of a situation. Account as a genre describes an event or experience but more frequently it is a statement, opinion or an assessment over a matter. Whichever is the correct genre is something that is mutually agreed in the discourse community of the text producer. (Kankaanpää & Piehl 2011: 304)

The test report's genre is report – the text producer himself has announced the genre in the headline: test report. Thus, the term is decided in the discourse community of SeAMK (Seinäjoki University of Applied Sciences). The text presents the experiments run on a sample of Satula snow guards in the laboratory test chambers of SeAMK. SeAMK is a multidisciplinary institution of higher education in West Finland. It is active in research, development, and innovation that offer testing-related services for customers.

The topic and the purpose of the test report are carefully explained in the beginning of the test report. The test measures the temperature behavior of the mounting method on a Kulo1 bonding. The primary purpose of the test was to produce formal material of the product qualities for Kulo to apply for CE marking (certification mark). The secondary purpose of the test was to produce formal material for Kulo's marketing. Thus, the receivers of the test report are both experts in the technical field and any layman that comes across Kulo's marketing material.

Affixing a CE marking (fr. *Conformité Européenne*) allows a free movement of goods and services in the European Economic Area (EEA) without hindrances. The CE marking confirms a product meets the minimum legal requirements on the markets of EEA which show a quality measurement both for businesses and consumers. (European Commission 2019) However, it is not a general mark of safety, nor does it guarantee a product is extremely high-class – it only guarantees that the product fulfils the minimal harmonized European standards (Tukes 2019). Within the Construction Products Regulation, CE marking always comes with a Declaration of Performance (DoP). (European Commission

2019) These increases the product's transparency in the comparison of different products and thus unites the planning in the construction industry. (Tukes 2019)

CE marking indicates that the manufacturer has followed the uniform standards of European Assessment Document (EAD) to run tests of the product. Furthermore, it indicates that the manufacturer quality controls the phases of manufacturing and facilities of the production. (Eurofins Expert Services 2018) The uniform obligations for the construction industry are presented in EU-Regulation No 305/2011 which applies to all the European member countries. The basis of the obligations for a manufacturer to follow in distributing and importing the goods are prescribed in the Article 11 of the Regulation. The second subparagraph of Article 11 (1) rules that the technical documentations must describe all "the relevant elements related to the required system of assessment and verification of constancy of performance." The obligations that have affected the most in the writing of the test report, are prescribed in the Articles 13 and 14: the product's selling requires instructions and information on a language which can be easily understood by the product's users.

The rules that the CE marking and the DoP follows, are based on the whole Europe covering EU directives. Thus, while the author of the test report has thought about the receiver in SL, they have also taken into consideration the requirements of the reader in the TT discourse community. The requirements are achieved by following the rules of the legally mandatory CE marking – rules that applies to all the consumers and sellers around EEA. The widely public audience of the test report sets an individual challenge – what are the norms that the transnational readers would expect to find from a text? Cultures are, after all, individual by their nature and cultures constantly develop as Pym (2001: 278) notifies. In other words, such development changes information and genres throughout the time.

Transferring a message from one culture to another requires from the translator not only knowledge in the stylistic and linguistic features of a text but also knowledge of the cultural features of the target audience. Translation should follow standard linguistic norms that the receivers in the target culture's discourse community are accustomed to in

a text (Immonen 2011: 107). In other words, a translator must know both the culture's ideology and the communication manners (Immonen 2011: 120). These assist the translator effectively to convey the message for the reader in such a format that the target culture's member can read the text as effortlessly as possible. (Immonen 2011: 107) Otherwise there is a great chance of sending misinformation and in the most extreme cases a poorly translated text might cause a dangerous situation. If a translator ignores textual analysis of their ST, the TT's quality will suffer.

As the topic of the test report concerns the construction industry, it is appropriate to base the linguistic conventions of the translation on the STE-guidelines that aims to neutralize any cultural features of a text. The STE-guidelines is discussed in more detail in subsection 2.2.2. In addition, the most beneficial medium for the test report is to write in a generally comprehensible manner. A fluently rhythmed flow of a language is achieved by an established writing practice that is characteristic of literal language. The standardized norms of a literal language minimize complexities and obstacles a reader might encounter in the text structure. (Niemikorpi 1996: 29) These are introduced in the next subsection.

2.1.2 LSP versus standard language

The test report represents a written document in the technical field which generally contains a great amount of special terminology. This type of special field terminology is used in the communication between experts in the construction industry. Such language communication used in any specialist field is known as *language for special purposes*, LSP. (Cf. e.g. Somers 1996) The first impression of the test report does convey strong indications of a common variety of LSP because the texts are strongly visualized with many pictures, charts and headlines. Also, the terminology of the test report seems to represent the lexical meaning that is common in the construction industry. However, after a more thorough reading the text reveals its reader friendly features.

In a text the differences between written features of LSP and standard language can occur strongly or slightly, depending on the text's function. The frequency of LSP features can change strongly because its basic structure and terminology is evolved on the standardized literary language. Therefore, it is important to define the two concepts that are often mutually described as standard language: literary language and standard language. (Niemikorpi 1996: 27) According to different dictionaries, grammars and handbooks of English language, the concepts are overlapping but it is a fine level of formality that separates them. The first one, literary language of English, relates to written language. The other one, standard language of English, is seen as an opposite to LSP because it is purposively aimed for simple and general linguistic contexts.

The concept definitions in the source language (i.e. Finnish) are universal, and therefore nearly equal to the English ones briefly defined above. In Finnish, literary language[1] is defined as the written form of language that is standardized (the Helsinki Term Bank for the Arts and Sciences 2019). Literary language comprises certain loosely included norms that flexibly enable space for the text's functional variety. (Ikola 1972: 18) Generally, norms are patterns of social behavior that is typical or expected amongst a readership (Oxford Dictionary English 2018). The flexible framework of norms allows literary language to act as the basis for individual and regional features, such as LSP. (Niemikorpi 1996: 29)

The purpose of norms is to produce with efficient notations sufficiently understandable text. Text is meant for reading thus individual deviations do not alter the most important feature of literary language: the readability of text. Text is readable when it follows generally accepted rules of grammar, lexical and textual norms. As far as a text is readable, the literary language allows for occasional violation of norms. An academic dissertation could, for example, seem to follow the literary norms by the look of its orthographic and grammar elements. However, if its syntax and lexicon are unorthodox in common sense, the dissertation deviates from, for example, a newspaper article aimed at a general audience. Also, both fiction and non-fiction can include extra features in text

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[1] FI: *kirjakieli*

such as tables, charts, or mathematical equations which normally are not part of literary language. (Niemikorpi 1996: 29–34)

The concept of standard language[2] is defined broadly as the medium of general usage of a readership in a community. Standard language is a generally comprehensible variety of language excluding special language terminology and regional variation. If any social or regional differences occur, they are used minimally – the idea is to enable a widely comprehensible understanding of the language in a community. (The Helsinki Term Bank for the Arts and Sciences 2019) Thus, the structure of clauses and sentences is sufficiently simple. (Lauerma 2012: 53) Standard language changes through time and trends within the social behavior. (Niemikorpi 1996: 28) Standard language is used, for example, in schools, meetings, or the media. (The Helsinki Term Bank for the Arts and Sciences 2019)

The lingual differences can be measured in qualitative or quantitative frequencies of a text. The quantitative measuring can be implemented by counting the average length of words, clauses and sentences of the text. The average lengths render the text's structural style whether it is complex or general. According to Gambier (2013: 65), this type of source-text analysis is valid in translation provided that the function of the TT is the same. The qualitative and quantitative analysis is run only on the source text's sentence structures, ignoring the individual word units of the layout. More accurately, as the text is a report, it has multiple headings which lack verbs. The results will gain the textual features of the ST that aid in analyzing the user of the test report. Also, the translation strategy of comparative stylistic analysis requires to analyze also the SL carefully.

A qualitative examination focuses on word choices by comparing expressions and idioms found in the text. Vehmas-Lehto (2011: 29) The qualitative linguistic features of the ST can be examined by counting the frequency of the word classes. Furthermore, the amount of each word classes' occurrence can be measured quantitatively. Word classes render more accurately whether the vocabulary is specific or common, thus they indicate the

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[2] FI: *yleiskieli*

medium of the language. (Niemikorpi 1996: 41–43) The features also reveal if there is any clumsiness in the structure that influences on the text's readability.

The lingual features of a text can also be quantitatively measured by counting the average length of words, clauses and sentences. The average length of words is counted by their letter amount. Similarly, the average length of clauses and sentences are measured by the word frequency in a clause or in a sentence. Equivalent differences in average lengths have been measured also in other languages researches, although the numerical results are not word for word comparable with Finnish language due to its grammatical use of case suffixes (Niemikorpi 1996: 45). Case is a category system of typical word classes in Finnish language morphology. These words classes are a noun, pronoun, adjective, participle and numeral (Leino 1989/2010: 50–52). In English language the case is usually indicated with a preposition, thus the word appearance is much more frequent in English than in Finnish[3].

Niemikorpi (1996: 41–47) has examined the linguistic differences between the Finnish LSP and the Finnish standard language by using a material of an Oulu Corpus. The material of the corpus is classified into special purpose categories and to nonfiction categories. It was developed in the University of Oulu, Finland, in the 1960's. The Oulu Corpus includes collected material of texts on different areas, such as written fiction works, transcribed radio speeches, newspapers, magazines and written nonfiction works. (Kielipankki, Saukkonen 1982) Niemikorpi (1996: 43–45) has summarized the frequencies of language and structure given in the corpus. These quantities of the standard language text and the LSP text are compared with the test report's linguistic features in chapter 4.

The source text author's aim has been to offer information on the products' safety qualities to everyone in a user-friendly language. The aim is based on the regulations of marketing on the Europe Economic Area (EEA). Shortly, a CE marking for a product is

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[3] There are 15 cases in Finnish. Compare: there are 4 cases in German, 2 cases in Swedish and English, and 1 case in French.

accepted after the manufacturer submits a document of Declaration of Performance and technical documentation on a formal testing of the product. CE marking guarantees for businesses and consumers in EEA that the product conforms the minimum quality requirements. The author's aim of writing to a wide public readership is transmitted via the SL's combination of both LSP and standard language. After receiving a CE marking, Kulo needs the English translation of the test report to be able to widen their marketing in the EU area, outside Scandinavia. Attaching the information on the products in English is sufficient enough in the beginning of importing and distributing in the EEA.

2.2 The core of the translation process – the strategy and practices

The majority of test report's target audience consist of non-native English readers. Therefore, the language should be neutralized: the flow should be smooth and clear, leaving no vagueness in the message for the end user. Terminology should be basic and uniform: writing style should consist, for example, of short sentences, simple vocabulary, consistency in terminology (Esselink 2000: 28). This does not, however, make the text any easier to write. The knowledge of a language is most important tool for the translator. In this section I introduce the translation strategy of comparative stylistic analysis by Vinay and Darbelnet (1958/1995), and a standard of controlled use of language, ASD-STE100 Simplified Technical English, that comprises of a dictionary and writing rules.

2.2.1 The seven procedures of a comparative stylistic analysis

A classic model by Vinay and Darbelnet (1958/1995) acts as the translation strategy of this study. The process-oriented localizing strategy analyses translation as a linguistic product by categorizing in detail what emerges in a translation process (Munday 2013/2001: 85–91). There are two general methods of translation: *direct translation* and *obligue translation*. Direct translation is a literal strategy which is easily adaptable in translating technical documentation. Obligue translation refers to free strategy. The two classes comprise together of seven procedures, i.e. different translation methods. (Vinay and Darbelnet 1995: 31)

The first three procedures are categorized as direct translation and the rest are obligue translation. The procedures are *borrowing, calque, literal translation, transposition, modulation, equivalence,* and *adaptation.* (Vinay and Darbelnet 1995: 31) Another, more recognizable labelling of Vinay and Darbelnet's 'procedure' in Translation Studies is a 'shift' when moving from the SL to the TL (Catford 1965: 73). Thus 'procedure', or similarly 'shift', refers to the process of change in either the syntactic form of a grammatical item or in the meaning of an expression (Palumbo 2009: 104). Each procedure operates on three levels of language: *the lexicon, syntactic structures,* and the *message.* (Vinay and Darbelnet 1995: 27–30)

The three procedures of borrowing, calque and literal translation are all part of direct translation method. In *borrowing* the SL word is directly transmitted to the TL. The borrowed SL words are used in other languages to fill a semantic gab or as a choice of style. (Vinay and Darbelnet 1995: 31–32) Borrowing is very common in the technical field. For example, on the level of lexicon a word borrowed from Finnish into English would be 'sauna'. *Calque* is also borrowing but instead of a one word, it consists of a whole SL expression or structure. When these methods operate on the level of the message, it is a translator's (or rather a human being's than a machine's) decision to make on the adequacy of the exact match between the SL and the TL expression. The procedure of *literal language* is the most common in between languages of the same family because it is possible to translate word-for-word. (ibid. 1995: 33–35)

Transposition changes one ST word class for another in TT, keeping the same meaning in TT. For example, verb changes into noun. (Vinay and Darbelnet 1995: 94) Changing the word class from ST to TT, the meaning of the translation is dependent on variations in form and in the order of syntax. (ibid. 1995: 29) Thus, transposition is operating on the level of syntactic structure. Transposition is one of the most common structural changes while translating (ibid. 1995: 94). In the test report, such a change is for example *Paitsi/Only.* A word-for-word translation by me, i.e. backtranslation, of the expression *'paitsi'* is [except].

In the procedure of *modulation,* the perspective of an expression in SL changes in the viewpoint of TL. Therefore, what is grammatically suitable in the SL, can be unidiomatic and awkward in the TL. (Vinay and Darbelnet 1995: 246). Each level of message is an individual entity reflecting a situation (ibid. 1995: 29). For example, in the test report a modulation is in *että este on ehjä / that the snow guard is not damaged*. A backtranslation of '*että este on ehjä*' is [that a barrier is intact]. Vinay and Darbelnet (1995: 246–255) give nine levels of a message which are presented in Table 1. According to the levels of a message, the example of '*that the snow guard is not damaged*' represents a negation of opposite.

Table 1. Levels of message in the category of modulation by Vinay and Darbelnet (1995: 246–255)

The level of message	An example
abstract <>concrete or particular <> general	*She can do no other > She cannot act differently;* *Give a pint of blood > Give a little blood*
explicative modulation or; effect <> cause	*You're quite a stranger > We don't see you anymore*
whole <> part	*He shut the door in my face > He shut the door in my nose*
part <> another part	*He cleared his throat > He cleared his voice*
reversal of terms	*You can have it > I'll give it to you*
negation of opposite	*It does not seem unusual > It is very normal*
active <> passive	*We are not allowed to access the internet >They don't allow us to access the internet [sic.]*
rethinking intervals and limits in space and time	*No parking between signs > Limit of parking*
change of symbol	Fr. *La moutarde lui monta au nez* ['The mustard rose up to his nose'] > En. *He saw red* ['he became very angry'].

The two final procedures of oblique translation are equivalence and adaptation. The procedure of *equivalence* is different than the more generally familiar concept of equivalence in Translation Studies. The equivalence of obligue translation, depicts the same situation differently between the ST and the TT. The change can be either stylistic or structural. (Vinay and Darbelnet 1995: 38–39). The procedure of *adaptation* is commonly used in matching the cultural differences of ST into TT in cases where the situation does not exist is the target culture. Therefore, a similar expression of TL must be used in the translation. (ibid. 1995: 39–40) There are no such source culture expressions in the test report that should be replaced to match the understanding of the international target audience. Therefore, both equivalence and adaption are ignored in the ST and TT analysis.

	LEXIS	STRUCTURES	MESSAGE
1. Borrowing	F: *Bulldozer* E: Fuselage	*science-fiction* à la mode	*Five o' Clock Tea* Bon voyage
2. Calque	F: *économique-ment faible* E: Normal School (C.E.)	*Lutetia Palace* Governor General	*Compliments de la Saison* Take it or leave it
3. Literal Transl.	F: *encre* ↕ E: ink	*Le livre est sur la table.* The book is on the table.	*Quelle heure est-il?* What time is it?
4. Transpo-sition	F: *Expéditeur* ↕ E: From	*Depuis la revalo-risation du bois* As timber becomes more valuable	*Défense de fumer* No smoking
5. Modula-tion	F: *Peu profond* ↕ E: Shallow	*Donnez un peu de votre sang* Give a pint of your blood	*Complet* No vacancies
6. Equiva-lence	F: (Mil.) ↕ *la soupe* E,UK: (Mil.) Tea E,US: chow	*Comme un chien dans un jeu de quilles* Like a bull in a china shop	*Château de cartes* Hollow triumph
7. Adapta-tion	F: *Cyclisme* ↕ E,UK: Cricket US: Baseball	*En un clin d'oeil* Before you could say Jack Robinson.	*Bon appétit!* US. Hi!

Picture 1. Summary of the seven procedures in Vinay and Darbelnet (1995: 41), in which SL is French (F) and TL is English (E).

Vinay and Darbelnet (1995: 20) prefer to separate from the ST so called *unit of translation* to operate with translating instead of analyzing each grammatical item. The purpose is to keep the phrasal words together instead of breaking them into meaningless pieces in the context in question. Furthermore, they describe the unit of translation as a combination of a 'lexicological unit' and a 'unit of thought'. (ibid.: 21) In Finnish this would suit especially with compound words that can consist in English units of two or more words. In the test report such grouping would be *kappaleet asetettiin ensin / the objects were set.*

A backtranslation of '*kappaleet asetettiin ensin*' is ['the objects were placed first']. The units of translations should be numbered in both ST and TT in the analysis of oblique translation strategy. That is, in the case of transposition, modulation, equivalence and adaptation. The strategy is to compare the ST numbers with TT numbers and by that method to find which procedure is adopted in the translation. (ibid.: 21)

The analysis of the translation is implemented with a list Vinay and Darbelnet (1995: 30–31) give for the translator to follow while working. The list has five analytical steps comprising of identification, examination, reconstruction, evaluation, and production of the translation. Firstly, the translator must separate and identify the units of translation. Next, the translator must examine the SL text and evaluate the content of the found units. Third comes the reconstruction of the metalinguistic context of the message, that is, the relations between language and other elements of a culture. Fourth, the translator must evaluate the stylistic effects of the text. Finally, the translator produces the TT and revise the finished product.

Munday (2013/2001: 105) argues that the model of Vinay and Darbelnet does not describe a translation process as they claim but rather the translation product. Therefore, Munday continues, the TT reader and their needs is forgotten (ibid. 2013/2001: 105). As the methods of UCT focuses on the user and the usability of the translation, it is suitable to analyze the TT, too. After all, a heuristic evaluation is performed on the second draft when the enhancing with the comparative stylistic analysis is completed. Therefore, the translation strategy will be used to enhance the parts of the first draft which received the most feedback from the external evaluators.

2.2.2 The STE-guideline

The controlled language rules are given in the latest issue of Simplified Technical English (ASD-STE100 2017). The benefits of the standard apply to all industries. The issue of STE-guideline has two parts: the Writing Rules and a Dictionary. The STE-guideline is meant for a professional writing. The STE-guideline will replace the company-specific terminology that the client lacks. I will use it as a guideline in translating the first draft of

the test report because it has rules also for grammar and style. Also, I will integrate it in the list of heuristics which is the checklist to find the problematic areas in the second draft's usability.

The set of Writing Rules cover aspects of grammar and style, such as the forms of verbs and adjectives. The Writing Rules cover the medium of grammar and style given in nine categories: (1) Words, (2) Noun clusters, (3) Verbs, (4) Sentences, (5) Procedural writing, (6) Descriptive writing, (7) Safety instructions, (8) Punctuation and word counts, and (9) Writing practices. (ASD-STE100 2017: ii)

The purpose is to write in a clear, simple manner. Therefore, noun clusters and long technical names must be avoided. No more than three words are allowed because otherwise the message is too complex, and the sentence structure is too long. (ASD-STE100 2017: 101–121) These are typical textual features for LSP in the technical field (Niemikorpi 1996: 41–47). Either the translator must choose a shorter name or use hyphens for a translation unit (ASD-STE100 2017: 114–116). For example, *'pakastus-sulatustesti'* is a long and complex compound word in Finnish that did not have an equal in English, so I had to back-translate it. *Freezing-thawing test* is a long version that is made clear with the hyphen. Another, simpler option would have been *freeze-thaw test*.

Auxiliary or modal verbs make the verb structures too complex. For example, instead of writing 'can be adjusted' one should write 'you can adjust' or in imperative 'adjust'. (ASD-STE100 2017: 133). Also, the suffix *–ing* of a verb can easily lead to misunderstandings. Especially in technical terminology the suffix *-ing* imply a duration that is not clear enough. The suffix *-ing*, in verbal constructions is often difficult to understand for non-native readers. (ibid. 2017: 133–134) However, *-ing* is allowed as a modifier in a technical name, such as 'Kulo1 bonding' or 'roofing sheet'.

Sentences can be simplified by linking an idea from one clause to another with approved connecting words such as, *and, but, then, thus*. The sentences cannot be long: the maximum length in words is 20. Consequently, the information must be given gradually and logically in short sentences. Paragraphs must relate to the information. (ASD-STE100

2017: 151) In the ST test report, there are three sentences that exceed the maximum length which I simplified in the first draft. For example, the longest sentence of ST included 33 words which I divided into 4 sentences without altering the original meaning.

The Dictionary is generally aimed at controlled language usage. It gives words that are common in technical writing. The Dictionary is based on simplicity. A word cannot have multiple meanings, for example, *to fall* means *to move down by the force of gravity* and not *to decrease*. Furthermore, if a word is a synonym, only one meaning is approved, and the remaining synonyms are omitted. For example, *start* is approved as a word, but its synonyms *begin, commence, initiate,* and *originate* are excluded from the meaning. (ASD-STE100 2017: 201)

The linguistic function of the test report was briefly introduced in the previous sections of this chapter. Studying the genre of the test report led the research to the heart of the translation process: to the linguistic features and the function of the text. A more precise analysis of the ST will be discussed in the Discussion, the chapter 4. In the previous sections also the translation strategy was introduced, and the STE-guideline was discussed in detail. The STE-guidelines replaces the missing company-specific terminology in this study. It is time to move on and present the methods of User-Centered Translation.

3 TRANSLATING THE TEST REPORT FROM A USER-CENTERED POINT OF VIEW

The translation process of this study is based on the complete set of the user-centered translation (UCT) methods in which the information on the test report's users is gathered iteratively. The process starts from the translation need and specification with the client: the important needs and the main characteristics of the present user of the product is recorded. The assembling of information continues with the test report's usability testing, i.e. sending a questionnaire for external participants. The participants who are experts in language will also evaluate if the translation matches between the ST and TT. The first draft of the self-translation is enhanced accordingly to the feedback. When the second draft is ready, another assessment is run on the usability: a heuristic evaluation. In the heuristic evaluation I will check the usability of the translation with a list of heuristics I developed for this study. The level of severity in found usability problems will be scaled from 0 to 4. In the following three sections, I will elaborate the methods of UCT in which the self-translation relates to.

3.1 The process and the concepts of UCT

This study focuses on evaluation elements based on User-Centered Translation (UCT) by Suojanen, Koskinen and Tuominen (2015). The methods in UCT emphasize the role of the recipient and their experience in the text's usability. The purpose is to focus on the target audience's needs and through those needs constantly develop the translation towards a more reader-friendly text. The idea is to use different methods during the entire translation process. In addition, UCT is a versatile and practical tool for the translator to collect material of the recipient. (Suojanen et al. 2015: 4) In this subsection I will present the methods of UCT and how the methods are implemented in the translation process of the self-produced translation.

Figure 1 demonstrates the iterative process of user-centered translation that includes revision and quality assessment of usability. The process contains of seven evaluation

elements. Suojanen et al. (2015:4) describe iterativity as "a cyclical mode of operation, where users are analyzed, and usability evaluated via recursive usability research methods". The seventh element, reception research, will be ignored in this research because it cannot be fitted in the time frame. The six elements are described in detail in this subsection. The six UCT elements implemented in this study are the following:

- Translation strategies including translating and revising;
- Definition of translation need;
- The task specification between the translator and the client;
- Development of mental models to support the idea of the reader;
- Designing heuristic evaluation and usability testing at an early stage;
- Post-mortem analysis that provides feedback for redefining.
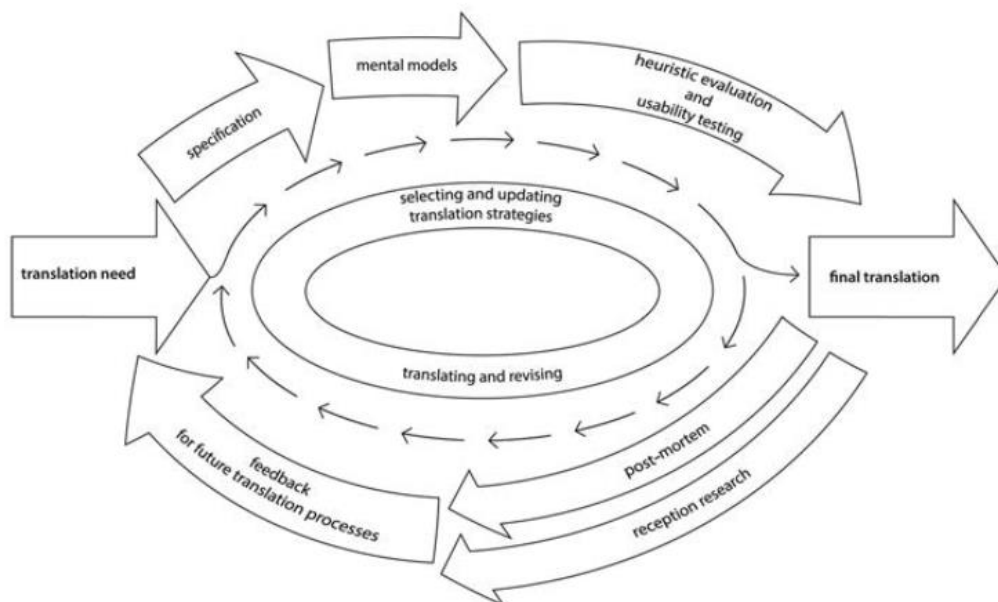
Figure 1. The user-centered translation process (Suojanen et. al 2015: 4)

The first element situates in the inner circle at the heart of the UCT process. It contains the translation which in this study is the test report. The first element contains also the processes of translating and revising. Also, the chosen translation strategy situates in the inner circle. The translation in the inner circle is an active element that develops during the translation process as the multiple evaluation phases shape it. The knowledge of usability and users accumulates in translation with the information gathered from the other elements on the outer circle. (Suojanen et. al 2015: 4) In this study, the translation

is meant to reshape twice. The translation solutions of the first draft are based on the guidelines of the standard Simplified Technical English and on the developed personas. The idea is to develop considerably the translation quality, which is why I will not employ the translation strategy until the second draft. The translation strategy is the comparative stylistic analysis by Vinay and Darbelnet (1958/1995).

The second element of UCT is a communicative need for translation. The translation need suggests defining and describing the end users at the early stage of the translation process. This is a method to confirm that the translation matches the needs, requirements and assumptions of the user (Suojanen et al. 2015: 4–5). The test report gives information on the quality and safety of the snow guard and its mounting method with Kulo1 bonding. Any user needs this information for decision-making as a consumer or as a representative of a business in the European Economic Area. Therefore, in this case the users are people who search for snow guards with different purposes: for purchase, for installation or for distribution. In other words, the language must be suitable at the level of formality for the experts, but the information must be easily available for the laymen.

The third element of the UCT is specification. To ensure mutual understanding of the translation goals, the translator must consult the client about the project. During the negotiations, a detailed written specification is drafted about the clients' ideas of the translation. Furthermore, it must be drafted in dialogue to secure the details. The specification element highlights the negotiation's importance between the translator and the client – it should be conducted in mutual respect of the other party's expertise. (Suojanen et al. 2015: 5) The client of this study's self-produced translation is the CEO of Kulo Snow Guards. The client and I have negotiated about the details in the translation. The only request was that the proper name of the snow guard should be kept in SL, *Satula*. The detailed written specification has detailed information on the client's experience in the requirements and needs of the customers and the distributors of Kulo Snow Guards in the Nordic area. Therefore, the specification is an entity describing the context of the user characteristics which I continued to divide into user groups.

The element of mental models is the fourth element of UCT. Mental model is a level on which all the information on the translation's end users is collected. It offers methods for the translator to create an explicit picture of the users' characteristics. There are three mental models given in UCT: an analysis of intratextual reader positions, the development of personas, and audience design. (Suojanen et al. 2015: 5) In this study, an analysis of intratextual reader positions are used to develop personas. More accurately, the analysis of user characteristics from the ST via Intratextual reader position and the development of the user groups from the topic via the specification are integrated into personas. The mental models are discussed in more detail in the section 3.2.

The fifth element of the UCT is heuristic evaluation and usability testing. This phase emphasizes the usefulness of an iterative process: it will be implemented after the first draft is done. The aim is to gather information on the text's usability. Heuristic evaluation is performed with the list of usability heuristics that improves the translation in the user's perspective. Heuristic evaluation is usually performed by an expert or by a group of experts. In usability testing, a group of a real target audience is empirically observed while they perform tasks concerning the usability of the text. When heuristic evaluation and usability testing are done at an early stage as recommended in UCT, there is time for the translator to reconsider the translation strategies if necessary. (Suojanen et al. 2015: 5)

In this thesis, the usability testing is performed through a questionnaire because the target audience consists of people living outside Finland. A part of the participants are experts in the technical field and language. Also, there are laymen of the technical field. The questionnaire is implemented on the first translation draft. The heuristic evaluation will be performed on the second draft. I will create the list of usability heuristics and act as an evaluator due to the timeframe of this study. However, the aim is to create the list as such that it will concern my weaknesses as a novice translator.

The sixth element of UCT is a postmortem analysis. Postmortem can be performed on the finished translation. In this final phase, all the elements of the translation process will be analyzed from beginning to the end. The result of analysis provides systematic feedback for redefining and fine-tuning the tools and methods for the next project. (Suojanen et al.

2015: 5) In this thesis, as the postmortem analysis will act the Conclusion. The idea is, after all, to discuss what happened in the translation process and why it happened.

The seventh element is reception research which is ignored in this study. Reception research will yield important results for the future translation projects. The more often reception research is repeated, the better results translator will receive. The method gathers information on the user's reaction while they read the finished translation – what do they understand and what was the reading experience like. Similarly, this method aids to redefine translation strategies for different text types and genres. Interviewing the actual end users who has English as a second language would also bring in new information. However, this type of benefit would come after large translation processes as the user profiles and needs become more detailed. (Suojanen et al. 2015: 6).

3.1.1 Taking the users into account: mental models

The idea of usability is founded on an assumption that there is a product and this product has a user. (Suojanen et al. 2015: 29–30) Mental models aid in decision-making on the translating process. Mental models cover categorizing users into many different user categories according to their characteristics and interests. The categorizing methods are multiple because there are various types of users. Translator should do the definition and description of the user before starting to translate. Mental models are useful, for example, because translator can critically assess one's own assumptions about the future user while translating. (ibid. 2015: 68). However, the characters of users should be studied and adjusted during and after the translation process. (ibid. 2015: 60)

The methods of the mental models are based on an individual recipient's role, needs, and experiences as a user of the product. Also specifying such features of a user as age, education, and ability are important to define. Thus, mental models will guide translation in the level of, for example, specific terminology usage. In addition, the place and context of the use can be defined. (Suojanen et al. 2015: 62) For example, there are many options

where a user of the test report will come across and read the text, such as in the Internet, at an event, in a store.

UCT introduces three mental models: intratextual reader positions, audience design and personas. Intratextual reader positions are ST based analyzing tools whereas audience design focuses on the TT reception. Personas represent the real user groups, modified and designed into fictive architypes. (Suojanen et al. 2015: 61–70) One can choose to use wither one or all of them in the translation project but Suojanen et al. (2015: 72) recommend combining the models. Models are especially useful in different stages of the translation process: together they narrow down the characteristics of the heterogenous user groups. Thus, the translator can achieve the best result by using them all. (ibid. 2015: 71)

Mental models are effective methods to collect information on the translation's future users. Especially in a situation as the self-translation of this study: neither the client nor I know sufficiently enough about the test report's users in the Europe Economic Area, outside the Nordic countries. In this study, the user characters are planned in the pre-phase of the translation through a specification with the client. After the specification is written, I will classify the information into user groups. Next, on the basis of the intratextual reader positions and the user groups, I will develop personas. After the first translation draft is finished, I will redefine the characteristics of personas if necessary, via the questionnaire.

Intratextual reader positions aid the translator to analyze the possible different reader orientations in the text itself. There are two intratextual reader positions: an implied reader and reader as a rhetorical participant. The first is familiar in the Translation Studies and the latter in technical communication. (Suojanen et al. 2015: 62) In UCT, 'implied reader' is "a theoretical construct which tells us what the text expects of its readers in terms of presuppositions and pre-existing knowledge" (ibid. 2015: 63). The reader as a rhetorical participant is visualized as an active selector of their role while the user reads the text. (ibid. 2015: 66)

An implied reader is an abstract representation of the text's entire audience. One can recognize certain reader types when analyzing the text structure – it is a textual tool. Hence, an implied reader is not an actual reader, but it indicates textual elements of a certain type of a reader one would expect to find in the text. It consists of characteristics which are thought to be representative of general propensities within a readership. (Suojanen et al. 2015: 62) In the planning stage of a translation project the vision of the reader is influenced by the translator's evaluations and analysis of the source text (Suojanen et al. 2015: 64).

In this study, the implied reader is willing to purchase, to sell or to install the product described in the test report. The test report is a formal documentation of the product's durability. The test report is written in a scientific institute, aiming to produce formal information for consumers, businesses and authorities. Therefore, the text contains specific terminology in a commonly understood manner. The genre is report which is seen, for example, from the text narrative. The body text is simple, but it contains complex sentence structures. The complex trivial information is summarized in charts or tables and generally explained in the body text. The ST test report is publicly available at the client's website; thus, the purpose is to publish the TT into the English website which will make the target audience widely public.

The reader as a rhetorical participant is analyzed via Coney's taxonomy (1992: 58–59). Suojanen et al. (2015: 31, 66) lists reader features into accurate categories: 1) reader as receiver of information; 2) reader as user; 3) reader as decoder; 4) reader as professional colleague; and 5) reader as maker of meaning. These aid the translator to add explanatory information if the usability of the translation requires it. Sentences should be short and simple in the perspective of usability. (Coney 1992: 59–60) There are some odd sentences in the test report that do need clarifying through more precise word order.

Reader as receiver of information is a passive consumer of products. It is assumed that the translator will interpret the reader's characteristics. Such features are, for example, the educational background, the level of expertise, and the attitudes the reader brings into the reading process. The translator needs to decide, for example, whether to add

information, simplify terminology or vice versa. (Suojanen et al. 2015: 66) The passive reader of the test report can be someone who is searching for alternatives in snow guard business. He/she can be, for example, a doubtful person searching for more data on Kulo's products. The reader can be also, for example, a passer-by in the information superhighway who stopped at Kulo's website because they wanted to know more.

The second taxonomy, *reader as a user*, features people approaching the translation with some other intention than using the equipment described in the text. (Suojanen et al. 2015: 66) According to House (2013: 60–62), defining an end user requires profiling the source text according to the aspects of language user and language use. The first includes such elements of the reader as their geographical origin and social class and the other includes, for example, medium of communication, the user's social relationship and social attitude.

In this study, for example, the user could be a distributor who sets the test report on a display to enhance their customers' knowledge on the products. After all, the information on the test report supports the user in their decision-making on whether the snow guards and the bonding method are safe, trustworthy, or buyable for usage. Without the verification of the test, Kulo's products are not trustworthy. The information on the report is required at the base level of Construction Regulations and CE marking (EU-Regulation EU305/20114 and Eurofins Expert Services 2018). Thus, it is a necessary text for the reader as a user.

The final category in Coney's taxonomy included in this study is *reader as a professional colleague*. A professional colleague reading the test report can be an expert either in the roofing construction industry or in writing texts in construction industry. A professional colleague understands the text without further explanation. They are either peers or superiors to the ST writer, the translator or to the person expert in the field. The translation should aim for intellectual, respectful, and honest tone in writing. (Suojanen et al. 2015: 67) In this study, both a peer to the translator and two superiors to the ST writer have analyzed the self-produced translation through the questionnaire.

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[4] Chapter VI, article 36: Use of appropriate Technical Documentation

The taxonomies are a part of the development of the personas and the taxonomies 3 and 5 are ignored in the first draft personas because the three others are broad enough. The third taxonomy, *reader as decoder*, is similar with reader as receiver of information because they both merely test the reception of the text, and do not analyze the message. Decoder is an expert in the topic and its terminology. The fifth taxonomy, *reader as maker of meaning*, represents the reader who analyzes the message. This is an individual interpretation beyond the writer's intentions. (Suojanen et al. 2015: 67) The expert participants of the questionnaire will give feedback on the LSP terminology that cover the two remaining taxonomies.

Next, it is time to develop personas by compiling the intratextual reader positions and the user groups of the specification. Personas are imaginary characters depicting the actual target group outside the text. Their purpose is to relate to the reader's characteristics and needs as closely as possible. The detailed descriptions are almost the same as an actual contact in the reader's world – their expectations, comprehension, and requirements regarding the product can be analyzed through the developed personas. Of course, the personas cannot give exact answers representing the entire readership, but they do form a general tendency and give a head start to the translation project. (Suojanen et al. 2015: 70)

The personas aid the translator in the translation to recognize the problematic areas of the text. The problems can be misleading vocabulary or even a wrong text type. The personas are useful during the entire project: in the beginning for choosing the tone, in the middle for defining or revising the linguistic choices, and in the end for matching for future translations. (Suojanen et al. 2015: 71) The persona's characteristics are designed in the following manner: name, background, personality, and looks. (Suojanen et al. 2015: 70) It is interesting to notice which one is more useful in decision-making while translating; to design precise characteristics for the personas or merely a few general features. The personas that I developed for the self-translation process of this study are introduced in section 4.1. These personas represent Nordic user who reads the ST. I will revise them to suit a user who reads the test report in English (as a second language) if necessary. The

revision will occur in the second translation draft, after receiving the questionnaire answers.

3.2 Evaluating the usability of the translation

The test report has different purposes. One is to strengthen the user's understanding of the snow guard's and its bonding method's qualities. Another purpose of the test report is its usage for trading purposes. That is, the goal of the translation is to enhance the positive relationships between the sellers and the buyers. As the test report has different purposes, it has instrumental value. This means that the usability characteristics of the test report can be investigated as an instrument within the context of trading the product and giving information on the product. (Suojanen et al. 2015: 35) The translation of the test report will convey the usability elements for the user because I will run usability assessments on the test report through a questionnaire and list of heuristics. First, a brief review on the textual elements that effect on the usability: legibility, readability, comprehensibility and accessibility.

When a text is visible, it fulfills the features of legibility. The features of legibility consist of visually easy and interpretive characters, words and lines of the text. Moreover, legibility consists of the technical aspects of reading. These are typographic features of the overall page design, such as the size and style of the font. The typographic issues are often set in the source culture setting which can be confusing for the TT reader. Adjusting the typographical issues into clear organization, will increase the usability of the text. A simple appearance is not a heavy load on the reader's physiological and cognitive capacity. (Suojanen et al. 2015: 49–50)

Readability relates to the stylistic features of a text, its textual organization, argumentation structure, word choices and its reader-friendly characters. Reasonable sentence length, an even paragraph division and smooth transitions between text parts are positive features on the aspect of usability. The measurable and quantifiable units of a text are also part of readability. Qualitative features include the text's cohesion and

terminological consistency. (Suojanen et al. 2015: 49–50) When the text follows norms, i.e. the generally accepted grammatical, lexical and textual rules, it is conventionalized (Niemikorpi 1996: 30). The TT is aimed for an international European audience which should not require radical changes in the textual norms. According to Bennett (2013, cited in Suojanen et al. 2015: 51) the usage of English language has become globalized, and its stylistic conventions are more generally accepted.

Comprehensibility and understandability are linked to the reader, so that the content of the text should be organized in a readable layout. This will enhance the reader's willingness and ability to follow the text. Comprehensibility is a situational and interpersonal quality of a text. It is the reader's characteristics that affect whether they understand the message. To enhance a text's comprehensibility, a translator must improve the legibility and readability of the text. This means the text should be easily learnable and memorable. If the text is poorly written, it decreases the reader's motivation to continue reading. (Suojanen et al. 2015: 53–55) In the perspective of the test report's purpose, poor comprehensibility would be disadvantageous. Therefore, to enhance the text's comprehensibility, the poor grammatical, semantic or pragmatic aspects of the ST should be repaired in the translation. (Suojanen et al. 2015: 55).

Accessibility is regulated by laws and used usually in cases where the product is made available for everyone. For example, intralingual subtitles for the hard of hearing. Thus, accessibility of a text makes the products and services available to all people, regardless of their individual abilities or backgrounds. (Suojanen et al. 2015: 57). The STE-guidelines aid the accessibility of the test report because with it the translator can write "technical text in a clear, simple and unambiguous manners" which "readers throughout the world will find easy to understand" (ASD-STE100 2018: ii). Another law that have had an effect already in the production of the ST is the EU-Regulation No 305/2011. In the Regulation the Articles 13 and 14 rules the product's language usage to be easily understood by the product's users. The EU-Regulation No 305/2011 bounds the TT as well because the translation is aimed for the European Economic Area.

3.2.1 Questionnaire as an empirical usability method

A questionnaire will act as an empirical usability test on the first draft of the test report. It is an approach to study the receiver's experiences in the test report's legibility, readability and comprehensibility. In the UCT, it is recommended to have 3–5 participants. (Suojanen et al. 2015: 80) There are 4 participants in this study's usability testing. Some of the participants live abroad, therefore the usability testing is realized through a questionnaire instead of, for example, eye-tracking. There are two parts in the questionnaire: part 1 is aimed to gather information on the real user i.e. personas, and part 2 deals with the textual usability of the test report. The questionnaire is enclosed in an appendix.[5]

Two of the participants are experts and two laymen in the construction industry. The first participant is an expert in LSP, being a manager in an international construction company. The manager uses a proficient level's English daily. The second participant is an expert in LSP and technical documentation. The scientist works daily with technical documents both in English and in Finnish. Also, regulations and standards are familiar for the scientist. Therefore, the scientist is able to compare the first translation draft with the ST.

The two laymen in the construction industry are proficient in the English language. The third participant is a translator in Finnish language, thus being an expert in the level of writing. Naturally, the translator can compare the English translation draft with the Finnish ST. The fourth participant is a German teacher. The participants' observations will be noticed and corrected into the translation. The correction will be run in the second draft of the translation.

The part considering characteristics of a real user has ten questions. The purpose is to possibly enhance the personas that I developed for the first translation draft. The questions are: (1) Gender; (2) Age; (3) Mother tongue, sub-questions bilingual, more – which one;

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[5] Originally the questionnaire consisted of two target texts for the participants to evaluate. However, to limit the material in this study, the other TT was removed. Therefore, the original questionnaire in the appendix has 'Part 1' and 'Part 2' and the Introduction refers to a test report of bolt.

(4) Level of English skills: reading; (5) Level of English skills: speaking; (6) Level of English skills: comprehension; (7) How often do they use English; (8) Knowledge level on construction terminology in mother tongue; (9) Knowledge level on construction terminology in English; (10) Familiarity on the test report.

The purpose of the part 2 is to receive detailed answers on the participant's reactions to the message and the language. There is extra space where the participant may explain their answers. The questions are: (1) If the terminology is too simple or too specific to understand; (2) If there are any sentences that are difficult to comprehend; and finally, (3) Have they found any errors. The rest of the questionnaire comprises of the test report's textual features of legibility: (4) Visuality (5) Form; (6) General organizing. The questionnaire sent to the experts in language have a couple more questions because they are able to compare the TT with the ST. These extra questions are: (7) If TT is comparable with ST; (8) Critical adds or left-outs; (9) logic; (10) Free commentary field.

3.2.2 The list of usability heuristics as a heuristic evaluation method

After the participants of the questionnaire have identified the usability problems of the first draft and returned their comments, I will analyze the answers and modify the translation accordingly. When the second draft of the test report is ready, it is time to run a heuristic evaluation on it. The term 'heuristic' refers to a method that enables a person to discover or learn something for themselves (ODE). Suojanen et al. (2015: 77) refers with 'heuristics' to a set of rules and principles compounded into a checklist. In a heuristic evaluation, translator or a group of experts are able to assess the translation's usability with the help of the checklist (ibid. 2015: 77). Furthermore, a list of heuristics is a concrete tool for the translator to produce a translation where the TT user is the objective. The traditional perspective in Translation Studies, the match between ST and TT, is purposively in less attention (Suojanen et al. 2015: 89–90).

Usability refers to the ease with which users can use a product to achieve their goals. Usability is based on learnability, efficiency, memorability and satisfaction that all include in the textual element of comprehensibility. Furthermore, usability aims to

prevent errors of the translation. (Suojanen et al. 2015: 82) When these features act as key phrases in a list of heuristics, they serve the translator iteratively throughout the entire translation process. The list of heuristics is meant for revising purposes as well. (ibid. 2015: 90) I have created a small list of heuristics for this study. It is based on the usability heuristics of UCT, introduced in the Table 2.

The list of heuristics in UCT includes ten key phrases. Suojanen et al. (2015: 89–90) have based their list on Jacob Nielsen's (1995) principles and Vesa Purho's (2000) list that represent usability testing in technical documentation. It is based also on Daniel Gouadec's (2010) checklist for translators. The aim of the list of heuristics in UCT is to have a checklist for translating any text types in the perspective of their usability. The key phrases start from macro level features of UCT continuing to textual features and micro level features of problem evaluation. (ibid. 2015: 91)

Table 2. Usability heuristics for user-centered translation. (Suojanen et al. 2015: 90)

1. Match between translation and specification	Why is the translation needed and does it fulfil the requirements defined in the specification?
2. Match between translation and users	Who are the users of the translation and how do their characteristics affect translation solutions? Are there possibilities for supporting different kinds of users? Do the textual choices reflect the information needs of the users?
3. Match between translation and real world	Is the translation aligned with its cultural context? Is cultural adaptation required?
4. Match between translation and genre	Does the translation match the conventions of the genre in question? Are the visual, auditory and other multimodal elements appropriate for the new context?
5. Consistency	Is the translation consistent in terms of style, terminology, phraseology and register?

6. Legability and readability	Do the visual elements of the translation correspond to the reader's physiological capabilities and relevant cultural guidelines? Is the user guided through the translation by using appropriate questions? Are the user's efforts of interpretation sufficiently minimized?
7. Cognitive load and efficiency	Is the translation well crafted enough to be easy to memorize and learnable – that is, clear and comprehensible? Do the users need guidance for using the translation and, if so, in which format?
8. Satisfaction	Does the translation produce a pleasurable and/or rewarding user experience?
9. Match between source and target texts	Has all relevant source material been translated? Is there unwanted linguistic or structural interference?
10. Error prevention	Have the potential risks of misunderstanding been minimized?

The list of usability heuristics crafted for this study is purposively short because the translation process has many parts. For example, the match between source and target texts are evaluated in the questionnaire by real users that are experts in language. In addition, the list of heuristics will be used in the future translations for Kulo Snow Guards. Therefore, less detailed heuristics is reasonable in everyday use (Smith 2008: 55). UCT suggest using the client's own style guide as the basis of heuristic evaluation (Suojanen et al. 2015: 78). Such guidelines would suit the language of the client's own products. The client of this study does not have a company-specific terminology. Therefore, in this study the Dictionary of the STE-guidelines will replace the missing company-specific terminology. In addition, the translation strategy focuses mostly on the product and not the reader, as Munday has observed (2013/2001: 105). Therefore, the list of heuristics will skip the match between ST and TT which is already done with the translation

strategy. The purpose of the list of heuristics is to run a final check on the translation's usability, i.e. to match the TT with the user's needs.

It is recommended to adapt the heuristics according to the text or to the audience (Korvenranta 2015: 122). In this study, the personas are designed in the beginning of the translation and evolved iteratively throughout the translation process. Therefore, the list of heuristics skips the match between the translation and its users. As the user is primary in the list of heuristics, the international target audience is considered first. Next, the list of heuristics covers the conventions of the genre. It covers also some textual features when translating from Finnish into English. The list is presented in Table 3.

Table 3. The list of usability heuristics developed for this study.

Match between translation and the user's needs	Why is the translation needed and does it fulfil the requirements defined in the specification?
Conventionalities	Does the translation match the genre in question? Does the medium of language follow norms a user would expect from the text?
Coherence	Does the vocabulary suit to the client's product? Is the terminology consistent?

The purpose of the list is to measure the level of severity of the found problems. There are other means for adjusting and enhancing the translation, such as the translation strategy. (Suojanen et al. 2015: 80) Each usability problem found in the second draft will be evaluated separately and rated according to the following Nielsen's (1995) five-point severity rating scale given in the UCT (Suojanen et al. 2015: 80):

0 = I don't agree that this is a usability problem at all;
1 = Cosmetic problem only: need not be fixed unless extra time is available on the project;
2 = Minor usability problem: fixing this should be given low priority;
3 = Major usability problem: important to fix, so should be given high priority;
4 = Usability catastrophe: imperative to fix this before product can be released.

In this chapter, I introduced the model of UCT in which the whole translation process of this study is built on. In the following chapter 4 I will introduce the personas I developed for this study and the entire translation process. I will discuss in detail the first translation draft, the feedback I received via the questionnaire, and the found usability problems. I will also discuss about the second translation draft, its heuristic evaluation and the level of severity of the usability problems found in the second draft. Finally, I will pull together the usability aspects of the translation process in Conclusions.

4 THE TRANSLATION PROJECT

Before starting to translate, the translation need and the specification must be identified. The translation need suggests defining and describing the end users which is a method to confirm that the translation matches the needs, requirements and assumptions of the user (Suojanen et al. 2015: 4–5). Therefore, in this case the users are people in the European Economic Area who search for snow guards with different purposes: for purchase, for installation or for distribution. The readership of the test report needs formal information on the Satula snow guard and the Kulo 1 bonding which are new products in the roofing construction. People generally do not know the product's principal characteristics, especially because the mounting method with a bond is relatively new on the European snow guard trading. In other words, the language must be suitable at the level of formality for the experts, but the information must be easily available for the laymen.

Specification is a written document of a negotiation the translator and the client which should be conducted in mutual respect of the other party's expertise. (Suojanen et al. 2015: 5). In the negotiation, the translation goals were discussed with the CEO of Kulo Snow Guards. The client's request on the translation was to remain the proper name of *Satula* in SL. In addition, in the specification was written detailed information on the client's experience in the requirements of the customers and the distributors of Kulo Snow Guards in the Nordic area. This is especially important information on gathering material of the end-user. I, the translator, have little experience in the needs of the end-user in the Finnish markets. The client has vast experience in the needs of the real users in the Nordic markets which gives great material of the context where users typically encounter the test report. However, the user elsewhere in the Europe might have different needs and requirements than the Nordic user has. Therefore, the questionnaire is sent for external participants who represent the target audience.

The source language's (Finnish) medium is a mixture of language for special purposes (LSP) and standard language. The sentences are long and comprises of long compound nouns. On the other hand, most of the pronouns are names of the machines used in the test. Thus, the pronouns represent LSP. The lexical features of standard language are

strong in ST, especially the frequency of common nouns is more than half of the total amount of nouns. Standard language reduces the linguistic complexities typical for texts that are aimed merely for experts. Thus, the original intention of generally usable ST is almost reached but the long sentence structures confuses the readability. One of the purposes for more usable TT is to fix the sentence structure. Thus, the aim of the translation is to avoid overly complex structure and overly complex vocabulary. Without forgetting the experts that are included into the target audience, the language of the translation cannot be unreasonably simple.

The self-produced evaluation tools consist of personas, a heuristic evaluation list and a questionnaire. These are important methods to gather information on the user and the usability of the translation. Personas need to be planned and completed already in the initial stage of the translation process. Personas are combined with the specification, with the intertextual reader positions and with user groups.

My research questions are: 1) How severe are the usability problems of the self-produced translation, 2) How should the most severe usability problems be fixed and 3) In which manner does the usability affect the development of the terminology? To find an answer to the questions, the self-produced evaluation tools highlights the problems. The received feedback and the severity rating scale will aid in the analysis. The main found problems in the translation related to the ST's complex sentence structures and the lacking information. In the first draft, there were usability problems on readability (coherence) and comprehensibility (cohesion). After the usability problems were fixed in the second draft, the remaining usability problems occurred in the readability which severity rating were from 0 to 2.

First, I will begin the discussion from analyzing the ST in section 4.1 after which I continue to introduce the personas in section 4.2. Next, in section 4.3 I will discuss the translation of the first draft, analyze in section 4.4 the feedback I received via the questionnaire and analyze also the found usability problems in the first draft. Third, in section 4.5 I will discuss about the second translation draft. Finally, in section 4.6 I will

analyze the level of severity of the usability problems found in the second draft via the list of heuristics.

4.1 An analysis of the ST

In this section the ST is discussed in detail, as it is important to analyze for the translation process. The intratextual reader positions of the mental models are built into text. (Suojanen et al. 2015: 62) Therefore, a detailed analysis of the ST is needed. The ST is available at the client's website[6]. I will measure the lingual differences of the ST test report qualitatively and quantitatively. The quantitative measuring is by counting the average length of the words, clauses and sentences of the ST. The qualitative measuring is by counting the frequency of the word classes in the ST. The results of both the measuring methods will be compared to Niemikorpi's (1996: 41–47) examination of the linguistic differences between the Finnish LSP and the Finnish standard language by using a material of an Oulu Corpus.

Only the most typical differences between LSP and standard language are demonstrated. More accurately, the typical features of word classes in LSP are nouns, adjectives and numerals. These features have an independent meaning in LSP that divides them from the universally understood standard language words. LSP is also rich in the amount of compound words. Long compound words typically have a negative effect on the text's legibility. Furthermore, the most common word class features in standard language are finite verbs, pronouns and adverbs which all connect, for example, with an active human interaction. (Niemikorpi 1996: 43–45)

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[6] http://www.kulolumieste.com/pages/fi/testiraportit.php

Table 4. The quantitative measure of words, clauses and sentences. (Niemikorpi 1995: 45)

The average length of	the Finnish standard language	the Finnish Language for Special purposes	the source text test report
words in a letter amount	7.1	7.9	8.4
clauses in a word amount	6.4	8.2	5
sentences in a word amount	11.5	15.6	11.7

The difference between LSP and special language is clear that is accurately measurable from the three quantitative amounts in the length of words, clauses and sentences in a text. The quantity of words is measured in the letter frequency and the quantity of clauses and sentences are measured in a word frequency. The diverse amount of the average lengths is comparable with the characteristics of the various styles and texts. Typically, a scientific text has longer words on average and a work of fiction has the shortest. Similarly, clauses and sentences are the shortest in a work of fiction (Niemikorpi 1995: 45–47) The amounts of the average length are given in Table 4 and, furthermore, a more illustrative demonstration is given in Chart 1.
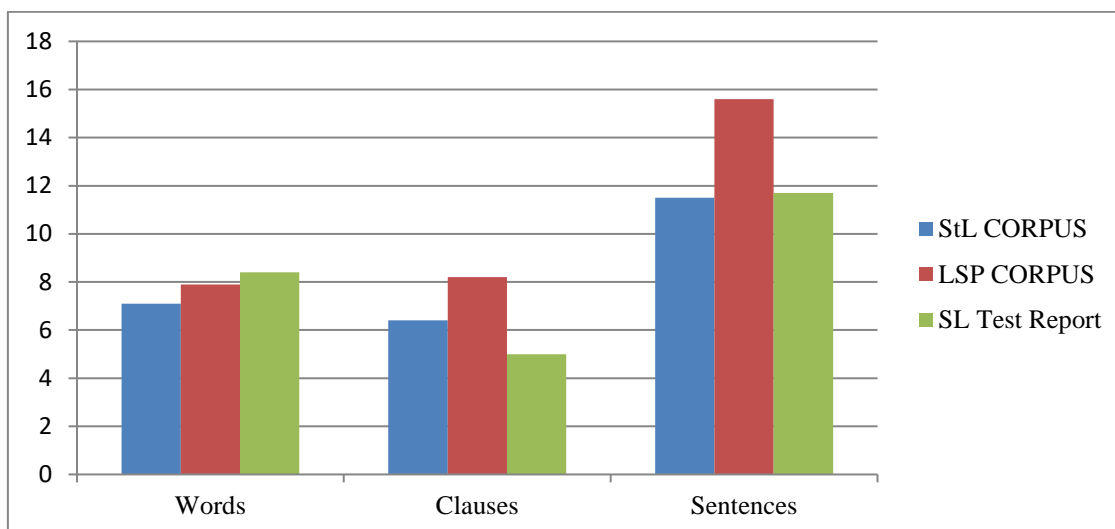
Chart 1. The average length of words (letter amount), clauses (word amount) and sentences (word amount) in the SL of this study. The languages in comparison are standard language (StL), Language for Special Purposes (LSP) and the test report. The Finnish equivalents are summarized from the Oulu Corpus (Kielikello, Saukkonen 1982) by Antero Niemikorpi (1996: 45).

Observing the quantities presented in Chart 1, the test report represents LSP on the regards of the average length of words and sentences. Clauses of the test report, on the other hand, are short that is typical in standard language. The long sentence structure does complicate the legibility of the test report which will challenge translating. For example, dividing the sentences into shorter form will change the original but would suit the purpose of legibility. Niemikorpi (1991: 289–325) presents an idea of tendency in language that explains the reasons of LSP being rich in the average length of words. The longer the clause, the longer and more complicated is the rest of the clause after its verb. Thus, the frequency of words also increases. As the purpose of translation is to produce good, readable language for the vast multinational target audience, these long and complicated sentence structures need clarifying.

Similarly, Niemikorpi (1996: 44) highlights that the frequency of word classes in different text types has been measured to have an equally comparable tendency with different languages. Thus, it helps in the decision-making on terminology in the translation process. The most characteristic linguistic features of LSP are individual meaning of nouns, adjectives and numerals. Individuality of these word classes means that they have

a special meaning in the field in question. An overall occurrence of these word classes, including also the individual meanings, is 52.9 % of the words in a LSP text (Oulu Corpus), whereas in standard language text (Oulu Corpus) the occurrence is 46.2 %. In the test report the occurrence of is 59.6 %. (Niemikorpi 1996: 43) A more accurate display of the percentages of this first group of word classes is given in following Table 5.

**Table 5.** The frequency of the first group of word classes. (Niemikorpi 1996: 43)

Word class	the Finnish standard language	the Finnish Language for Special purposes	the source text test report
Nouns	36.4 %	39 %	47 %
Adjectives	8.0 %	10.2 %	4.0 %
Numerals	1.8 %	3.4 %	8.8 %

The word classes that are relevant in the perspective of comparing the linguistic differences of LSP and standard language are finite verbs, adverbs and pronouns. These are more common in standard language but in the test report the frequency represents clearly LSP. Furthermore, a dominant characteristic of LSP is a frequency of compound words. These word classes are the second group that is displayed in the following Table 6. (Niemikorpi 1996: 43)

Table 6. The frequency of the second group of word classes. (Niemikorpi 1996: 43)

Word class	the Finnish standard language	the Finnish Language for Special purposes	the source text test report
finite verbs	14.4 %	12.0 %	11.0 %
adverbs	12.5 %	10.8 %	9.2 %
pronouns	7.6 %	5.9 %	3.5 %
compound words	7.5 %	11.6 %	16.2 %

Compound words are especially typical in the Finnish language. Compound words are combinations of two or more written words of a noun, an adjective or a verb (Oxford Advanced Dictionary). For example, 'snow guard' is a compound word in Finnish, *lumi* [snow] + *este* [guard] = *lumieste*. All the compound words in SL are noun combinations. Hence, the high frequency of the compound nouns reflects with the average word length common in LSP.
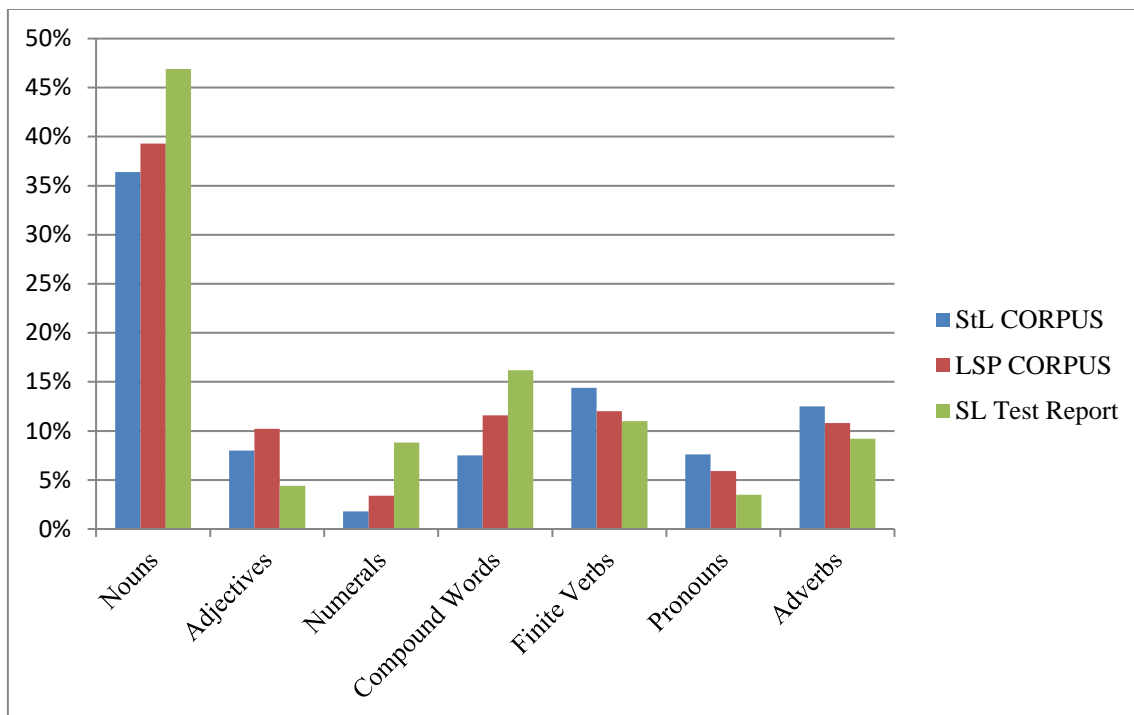
Chart 2. Demonstration of the quantity of word classes in the source language (SL) of standard language (StL), LSP, and the test report. StL and LSP quantities are counted from Oulu Corpus by Niemikorpi (1996: 43).

The figures of Chart 2 show that most of the linguistic features of the test report represent LSP in source language. Adjectives seems to be the only word class that is comparable with their standard language frequency. An interesting viewpoint is a comparison of the frequency of nouns that have an independent meaning. That is, dividing the counted nouns of the test report into proper nouns and common nouns in both language styles. Roughly one half of the nouns represent LSP and the other half standard language. The occurrence of the proper nouns of LSP is 6.5 % and the common nouns of LSP 45.8 %. The percentage of the nouns that represent standard language is in the proper nouns 0.9 % and in the common nouns 47.7 %. The frequencies of the nouns are presented in Chart 3.
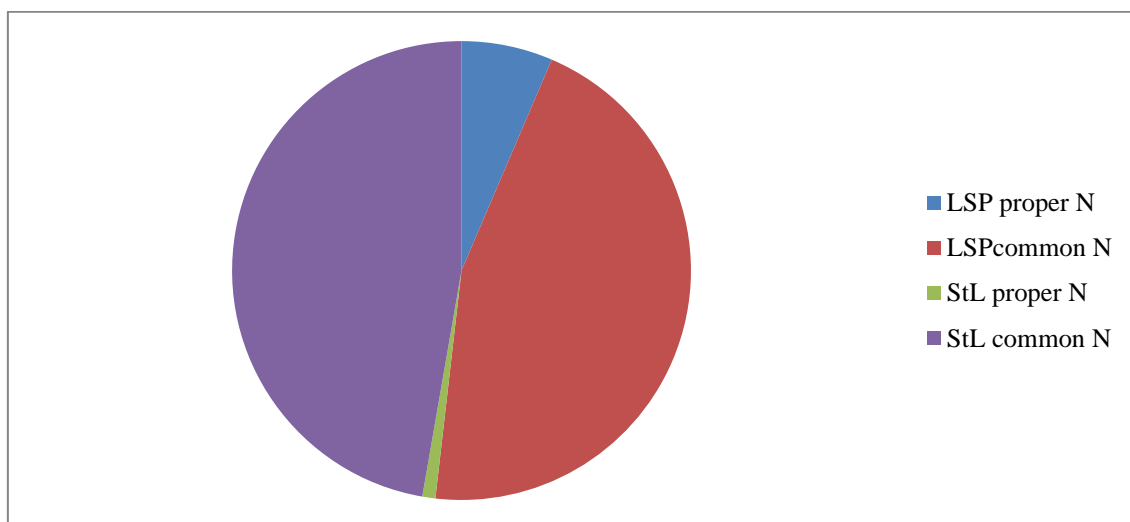
Chart 3. The frequency of proper and common nouns (N) of LSP and standard language (StL) of the test report in the source language suggests the overall flow of the text is generally comprehensible.

Thus, on the regards of the frequency of common nouns, the word class of the nouns in the test report represents standard language. It is seen in Chart 2 that the majority of words of the test report consist of nouns – the total frequency of all the remaining word classes is 36 %. Therefore, the text does have a flow of standard literal language. The vocabulary of the test report is a combination of standard language and LSP. The structure is complex due to long sentences, long words and a great number of nouns. Complexity has a negative effect on the text's readability that is required in the translation need to be simple. Thus, the readability can be repaired while translating by shortening sentences and adding explanations that do not alter the purpose. Strategies that suit the purpose for translating in simpler LSP language are found from the vocabulary and grammatical rules by the standard of STE100 Simplified Technical English.

The frequencies show that the intratextual reader of the test report is both national and international. The information given in the test report act as the scientific proof of the quality requirements that is intended for anyone to read. Therefore, the test report is meant to be readable which is the most important feature of a text aimed at a wide public audience. The test report in SL has many textual features of language for special purpose: long sentences, long compound nouns and many LSP pronouns of the machines used in the test procedure. However, the text does have many features of standard language. The

textual features of standard language reduce the linguistic complexities that are typical in communication of merely experts. Thus, the aim of the translation is to avoid overly complex structure and overly complex vocabulary. As the test report are meant for any receiver to read, including experts, the language cannot be unreasonably simple either.

4.2 Personas created for the first draft

Personas are imaginary architypes depicting the real end-user of the TT. Their purpose is to relate to the reader's characteristics and needs as closely as possible. The detailed descriptions are almost the same as an actual contact in the reader's world – their expectations, comprehension, and requirements regarding the product can be analyzed through the developed personas. (Suojanen et al. 2015: 70) The personas aid the translator in the translation to recognize the problematic areas of the text. The problems can be, for example, misleading vocabulary or even a wrong text type. (Suojanen et al. 2015: 70) After the introduction of each persona, there is a paragraph that demonstrates the translation situations in which the persona aids with the decision-making. First, a brief discussion of the creation process.

In the specification the client described the basic characteristics of the consumers. These included their living environment, education or profession, hobbies, and personality. On the textual level of legibility is important to avoid too much load on the user's physiological and cognitive capacity (Suojanen et al. 2015: 49–50). Therefore, it requires a knowledge on the different levels of experience in the roof safety products. It requires also a knowledge on the different context of use. The client has also experience in situations in which consumers or businesses have searched for the information the test report offers.

After finishing the specification, I divided the characteristics roughly into user groups. The user groups give the context where the user might encounter the test report. Next, I analyzed from the ST the intratextual reader positions which show the user's requirements

on the textual level. Together with the user group drafts and the intratextual reader positions I developed four personas: Raimo, Anna-Maija, Pauli and Arvid. These personas represent the Nordic user who reads the ST. If necessary, I will revise them to suit a user who reads the test report in English (as a second language). The revision will occur in the second translation draft, after receiving the questionnaire answers.

The first persona, called Raimo, is a typical customer of Kulo Snow Guards. Raimo is an expert due to his profession: he is an entrepreneur in the construction industry. He lives on a small farm 5 km from a rural city in Southern Ostrobothnia, West Finland. During his free time, Raimo enjoys small projects such as repairing or building constructions. Down-to-earth and a cheerful Raimo's hobbies include hunting. Snow guards are familiar to Raimo through his work experience, because he has sold and installed all type of snow guards. He heard about the Kulo's polycarbonate snow guards from another construction firm that was advertising the Kulo's products. Thereafter Raimo has installed the Kulo snow guards a few times for his friends and family. He began to distribute the snow guards. He often visits the website for further information on the product's quality. Raimo is interested in the Kulo products because they are easy to install alone.

In Coney's taxonomy category, Raimo represents the category of *reader as a professional colleague*. Because his occupation is an entrepreneur in construction, Raimo is an expert peer with any person in the construction industry. However, his expertise is constricted to practical work instead of producing similar texts. Therefore, Raimo does understand most of the test report's LSP pronouns and nouns and he would not be alerted of the complex sentence structures. However, because the subject matter is new to him, he prefers to familiarize himself thoroughly with the phenomenon.

The second persona, Anna-Maija, is originally a building engineer from Finland's capital city, Helsinki. A decade ago she grew weary of her profession and decided to change into a more creative branch: she educated herself as an interior decorator and moved to a smaller city a few dozen kilometers away. She is an energetic person who needs to have activities throughout the calendar year, especially outdoor activities. Therefore, she enjoys gardening and sailing.

Because of her previous occupation, Anna-Maija was obligated to know about roof safety products regulations, thus she understands the Construction Regulations in Finland. Anna-Maija prefers to keep herself updated with the news on the construction industry and therefore she enjoys visiting different fairs. Once she joined the Construction Fair in Helsinki where she got information on the polycarbonate snow guards on Kulo's stand. She decided to recommend the Satula snow guard with Kulo1 bonding for her neighbor's terrace's glass roof, because the neighbor would like to spend time on the terrace during winter. With the possibility to attach the snow guards by bonding, the neighbor has a safe terrace area.

Anna-Maija represents *a professional colleague* of the writer of Coney's taxonomy. In her previous occupation Anna-Maija had to formulate multiple types of texts. She understands the terminology in the test report and might wish some parts would be more precise. She knows where to find more information without any obstacles. Anna-Maija could have a conversation with both experts and laymen. As was told in the story, she will recommend snow guards for her laymen neighbors. This would also make her fit in the category *reader as a user* because she might have to simplify the subject matter with standard language when explaining to the neighbors the test report.

Pauli, a retired history teacher, is the third persona. Pauli lives in Tampere sub-region Nokia, that situates in Middle Finland. He owns an apartment in a row house. Nowadays he mostly runs the errands of the row house's association as he is the chairperson. Pauli enjoys classical music and nature: he is a baritone in a choir and a member of a twitcher club. Although Pauli needs peace and quiet from time to time, he is also keen on listening to people. He enjoys solving problems, in the form of finding information. Pauli is not talented in renovations or in any similar fixing.

Finding information is also how Pauli found Kulo's products. The row house's roof sheets were repainted. The material, a cellulose fiber, turned slippery due to the new paint which affects in preventing precipitations. Now the roof needs snow guards, said the painting company. Pauli searched for information on the Internet. He found out that the metal pipe

snow guards are not recommendable for cellulose fiber because of their high vulnerability: the sheets could break into pieces. This is because the metal pipe's back bracket is mounted on the roof board, shifting the snow load's pressure in front of the metal pipe. Suddenly Pauli notices the Kulo's snow guards that are suitable solution for his roof. Pauli calculates that snow load's pressure is divided into larger area, protecting also the sheet. He prints the test report to present the snow guard's qualities for the other association members.

Pauli fits into the category of *reader as a user*. He does not care about understanding how to install the snow guards but only wants to suggest if other members would agree in buying the products. Therefore, his intention in reading the text is to enhance other people's knowledge and find a convenient solution for their common problem. Furthermore, the LSP terminology is new for Pauli but because he is used to learn different LSP terminology in his previous work and in his hobbies, he does not find the test report overtly difficult.

Finally, the fourth persona is Arvid, a client server programmer from Northern Sweden, Luleå. Arvid is a person who is interested in facts: during his free time, he enjoys playing computer games. He also enjoys spending time with his friends at their club where they play brain games. Arvid used to have problems with his patience, but after starting swimming as a hobby, he calmed down. Today, he swims throughout the year in the sea. Good nerves are important in both customer service and in the brain games.

Arvid does not have any experience in the roof safety business. Arvid's childhood home in Kiruna, North Sweden, has acted as a cottage for years. During the spring, there had been an accident due to snow load: a snow drift had torn ladders off from the veranda's roof, which caused the roof to collapse. The roof has been repaired and the builders recommended Arvid to install snow guards to prevent a possible precipitation in the future. As he likes to compare different solutions, he searches the Internet for different solutions. Arvid has never heard of these type of snow guards before, thus he needs to study them more carefully. The test report is an important material in his decision-making.

Arvid presents the category of *a reader as a receiver of information* in Coney's taxonomy. He would not have searched for any information on snow guards if it was not for the accident at the cottage and thus the builder's recommendation. Also, he will not install the snow guards himself but will let the builders do it after his search is done. Arvid has no interest in the construction industry but does understand its logic. Usually he faces matters doubtfully before familiarizing himself with a solid, formal information. Therefore, the test report is one of the materials that convinces him.

4.3 The first draft

Both the first draft and the second draft are enclosed in an appendix. The ST examples in analysis are given in cursive and the TT examples are given in single quotes. Furthermore, all usability problems are highlighted in bolding.

The purpose of the UCT methods is to iteratively evaluate the usability of the text in the translation process and if needed, change the translation strategy while the process develops. (Suojanen et al. 2015: 4) Introducing and analyzing two translation strategies would have been abundant in the time frame and the restricted space of the research. Therefore, I decided deliberately to start translating the first draft without any translation strategy.

Translator needs to ground the translation decisions on the material that reflects the target audience's needs and expectations. Emma Wagner (Chesterman and Wagner 2002: 44) argues that a guideline is more advantageous in translating instead of a complex translation theory. Wagner would, therefore, prefer to translate with practical tools that suits into an everyday work. (ibid. 2002: 42–46). Such an idea encouraged me to make the translation decisions only on the guidelines of the standard Simplified Technical English and on the personas. The purpose is to highlight the problematic translation areas where I struggle as a novice translator. The feedback from the external participants will emphasize the areas where I need pay more attention. Of course, I will add the translation strategy in the second draft.

The results of the test report's structure and medium analysis in subsection 4.1. revealed that the SL sentence structure is complicated. Even though, the aim of the SL is to be readable for anyone, the author of the ST tackled with the characteristics of LSP because he is more practiced in technical writing. In this type of situations, a translator should be prepared to make even radical changes in the TT and, for example, omit unnecessary verbosity. The purpose should be to create in the translation the same effect on the TL reader as the original intended to have on the SL reader. Therefore, the translation can improve the method of sending the originally intended message. (Chesterman et al. 1979: 16–17)

The personas aid the translator in the translation to recognize the problematic areas of the text as introduced in the previous subsection. Encountering difficulties in choosing a correct term, it is useful to stop and rethink the personas (Suojanen et al. 2015: 70). There were many occasions in which the personas aided. For example, whether to rely on Arvid's knowledge or Pauli's knowledge when referring to the snow guards used in the test. The concepts 'sample', 'article' and 'object' were the options. In the STE-guideline, 'sample' refers to a piece or quantity and 'object' refers to something one can see or touch. In addition, 'article' is not approved in the STE-guideline. Pauli will probably understand better 'object'; therefore, 'object' is used in the translation.

The aim was to form a consistent layout for the TT which makes the usability easy for each persona. Therefore, the typographic treatment is thoroughly the same from the cover to the final page. The layout is organized in a common manner for reports: the same font, the subheadings are on the left and the body text is on the right (Mossop 2001: 112). The header and the footer include the same information as in the ST. The TT heading and the subheadings are bolded similarly as in the ST. The bolding illustrates the narrative. In the TT the pronoun indicating the snow guard model is highlighted in cursive because it represents the SL.

The problematic area of the lexical items was naturally to find the English LSP terms that equals with the ST. For example, it was challenging to decide whether 'kiinnittää' equals

to 'to mount', 'to install' or 'to attach'. Installing is a common verb seen in the construction industry. However, because the purpose is to use glue, then 'attaching' is more suitable option as it refers to fastening. Also, 'to attach' in the STE-guideline refers to 'to stay together or to cause different items to stay together. Another lexical item that I struggled with, was 'liima' [glue] which I am accustomed to see as 'an adhesive' or as 'glue'. However, in the STE-guideline, a more approved noun is 'bond' which is why I decided to use bond.

Not all terms have an equal match in the STE-guidelines. I had to familiarize myself with some physics, namely with the stress-strain relation. The idea of Anna-Maija reading the test report encouraged for more precise decisions on the translation. The purpose was to understand the meaning of the terms 'viruma' [creep] and 'taipuma' [yield] in order to use the correct terminology. In the perspective of usability, these terms are not explained carefully in the test report, and thus Pauli would not understand the meaning. However, as Pauli is not interested in understanding, the LSP terminology does not confuse the aim of the message: the product's quality is tested.

A few sentence structures in the ST are overly long and complex that affect negatively in the readability and the comprehensibility. The STE-guidelines urges to simplify the sentences and the maximum word amount is 20 words per sentence. As I compared in the subsection 4.1 the average length of sentences in LSP of Finnish is 15,6 words per a sentence. The comparable measure in the ST test report is 11,7 which suggest that majority of the test report sentence structure is easy. The word amount of the sentence is one of the main reasons that affect in the length of the structure.

The sentence structures did not need much of simplifying. In standard ST language the average word amount per sentence is 11,5. Three sentences in the ST test report had overtly many words: 21, 22 and 33 words per sentence. Mainly the long and complex sentence structures are due to the usage of passive. Especially the author had used the inessive case of passive, '*tutkittaessa*' [while examining something]. The solution was to break the word into simpler lexical items. Minimizing the quantities do not immediately mean that the readability improves (Suojanen et al. 2015: 52). Therefore, adding cohesive

linkages between the TT sentences increases the smoothness although it changes the original text.

4.4 Found usability problems: the questionnaire

The first draft of the translation was sent for external evaluators. Two of the participants are experts in the construction industry, a manager and a scientist. The two other participants are laymen in the construction industry, a translator and a teacher. Each participant's language proficiency in English according to the CERF (Common European Framework of Reference for Languages, Council of Europe 2018) is minimum C1. Therefore, they all are a proficient user of the English language. In a usability testing it requires 4 to 5 participants to represent a certain segment of an audience in order to reveal about 80 percent of the general usability problems in that specific field (Rubin and Chisnell 2008: 67). Therefore, the feedback on the language quality indicates the potential usability problems in the text (ibid. 2008: 90). I will introduce the found usability problems through the textual elements of legibility, readability and comprehensibility.

Problems in the translation's physical presentation are formed of the visual features, i.e. of the text's legibility. In the revision the consistency should be checked from the typography in the text formatting, the layout in the paragraph arranging and the organization in the overall document organizing (Mossop 2001: 111–113) These features form the text's visually easy and interpretive characters, words and lines (Suojanen et al. 2015: 49–50). For example, the manager recommended to capitalize the typography of the snow guard pronoun and move the backtranslation into brackets 'SATULA (saddle model) of Kulo Snow Guards' instead of using the cursive '*Satula* Saddle model of Kulo Snow Guards'.

The teacher and the translator payed attention in the footer which is full of information. In the ST, the footer includes the contact information on the University of Applied Sciences of Seinäjoki and the contact information on the construction laboratory. The

addresses, phone numbers and e-mails take plenty of space. Especially when the SL addresses are long as they require an explanatory abbreviation of address 'add.' to indicate the word combination is an address. The footer is similar on each page that confuses the overall organization.

Readability relates to the stylistic features of a text (Suojanen et al. 2015: 53–55). The level of language should suit to the report, to the field of roofing construction and most of all, the level of language should be usable for the test reports users. If the sentence structure is poor in the ST or the connectors are poor in the ST, then the word order should be organized better in the TT. There are some SL phrases in the first draft that indicate the laboratory where the test took place. Mossop (2001: 107) recommends minimizing these indications. Cohesion, "the flow of words" (ibid. 2001: 107), is characteristic for readability.

Three participants wished the language of the test report should be more specific. The teacher meant more accuracy on the grammatical level whereas the manager and the scientist meant accuracy on the lexical level. The technical terms should be more precise. For example, the manager and the scientist regarded 'temperature adjustment' as a vague term and thus suggested 'temperature fluctuation'. Another conceptual error the scientist observed was the noun 'strain' which should be changed into 'stress' and furthermore, 'straining' into 'load'. Neither of the laymen paid attention in the terminology.

The feedback on the grammatical level of the text was similar from the manager, the teacher and the translator. The first draft has a general lack of 'the' articles. Some of the prepositions were chosen unidiomatically. The translator described the grammatical faults as a source text influence. These did not, however, cause any logical error in transferring the message. There were also a few mistakes in plurality of verbs. The grammatical mistakes cause trouble in the smoothness in the usability of the text because the reader must pause.

The most severe usability problem in readability was in the following sentence: '*Testikappale No: 10 irtosi 1437N voimassa pääosin liimauksistaan*' (SeAMK 2016: 7)

which was translated in the first draft as 'The test object no. 10 **came off mainly out of** its bonding in 1437N force.' The bolded preposition cluster is the one that each participant commented on. According to the translator, the sentence was one of the many reflecting the source text. Similarly, the following sentence caused confusion: 'Noticeable is that the thickness of bonding's seal clearly **had an effect on** the snow guard's **creep** in 1500N force'. It lacks an article, but it also has difficult terminology. The 'had an effect on' was chosen according to the STE-guidelines in which the verb 'affect', and 'impact' are not approved. The term that should be used is the noun 'effect'.

A text's comprehensibility builds on its features of legibility and readability; thus, the text should be easily learnable and memorable. The text should be complete, and the facts should be checked to guarantee the correctness. (Suojanen et al. 2015: 53–55) The test report does not have any nonsense according to the participants; thus, the correct meaning behind the errors could be guessed. This, of course, is not approvable in a translation. There was also poorly chosen terminology which was not incorrect in the level of standard language, but it was noticeable for the experts. That a text is logical, all the contradictions between sentences or other logical errors should be checked and revised (Mossop 2001: 104).

There were two sentences in the first draft that reflected a wrong message. First, the ST clause '*sulatus upottamalla (koekappale)vesiastiaan*' (SeAMK 2016: 3) was translated as "Thawing was performed by sinking the object **into a water bucket**". Expressing the testing method in the particular words, the sentence would suggest that the researchers set the object into an empty water bucket. A layman would not consider this. Therefore, the manager and the scientist preferred a sentence as "Thawing was performed by sinking the object **into a bucket filled with water**".

The second odd sentence had a wrong verb and a logical error. In the first draft was written "The test was **done** according to a freezing-thawing method of standard SFS-EN 491 **in paragraph 5.8.**". The translator and the manager clarified that translation suggests that the test was performed in the paragraph, instead of the laboratory. The manager remarked that the verb should be either 'run', 'carried out' or 'performed' instead of 'done'.

The manager suggested that the standard of SFS-EN 491 could be mentioned also in the heading. The standard occurs in the ST merely once. EN 491[7] is a document of European Standard that focuses on the test methods relevant to concrete roofing tiles and fittings. On the other hand, when Pauli reads the test report to search for the product's durability characteristics, thus he does not need the mentioning of the standard more than once.

The most severe usability problem in comprehensibility was in the following sentence: 'In a straining test the objects were set in a strain of 1,2 x design load (5000N / 4 pcs x 1,2 = 1500 N)'. The teacher found the mathematical equation confusing. There are two options: either to change its location to footnotes or explain the equation with lexical items. The concepts of 'strain', 'design load' and the mathematical equation affects negatively on the logic of the message. Coherence did not occur in this sentence. Coherence, after all, builds the logic of a text – it is "the flow of ideas" (Mossop 2001: 107). This sentence affected in the accuracy of the message because the teacher did not understand the meaning of it.

The personas reflected the target audience's needs quite well because the translation did reflect the message of the ST. According to the translator, everything that had to be translated is translated. However, I did not realize that some LSP terminologies, such as the mathematical equation, would affect in the usability. Therefore, the information received through the questionnaire is important on the comprehensibility of the translation. It is possible that being a novice translator some critical parts are loyally transferred from ST into TT without any hesitations. The questionnaire was also a convenient method to receive valuable information for a small-scale study in a relatively short notice: it took approximately one week from all participants to send in their answers. Therefore, creating the persona's together with a small feedback from the target audience is beneficial also for a small study.

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[7] 'SFS' is a country specific abbreviation of the organization that is responsible for both national and international standards. Thus, SFS refers to The Finnish Standards Association.

4.5 Compiling the second draft

Transferring a message from one culture to another is traditionally used with either global or local textual strategies. The usability of the translation is enhanced with the aid of an analysis list by Vinay and Darbelnet (1995: 30–31). The idea of the translation strategy is to change a ST part that is familiar in SL into a TT part that is familiar in TL. Although the chosen translation strategy is a local strategy, it suits the self-produced translation in which the TL is simplified English aimed for a multinational target audience.

The translation units, i.e. entities of a single idea, of the second draft are analyzed with *borrowing, calque, literal translation, transposition,* and *modulation.* The units of translations are numbered in both ST and TT and the strategy is to compare these numbers to find which procedure is adopted in the translation of the second draft. The second draft is combined with the received feedback from the questionnaire and the translation strategy is implemented on the paragraphs on pages 2–4, 7 and 10. I will introduce the found usability problems through the textual elements of comprehensibility, readability and legibility.

After the analyzing the first draft, the implementation of the translation strategy revealed that the poorly structured sentences in the ST had a more severe effect on to the coherence – "the flow of ideas" – than what it seemed in the first impression. There were four sentences in the first draft that did not transfer the meaning in a clear manner. I will introduce them as a whole set with the extracts from the ST, the first and the second draft. The examples of comparative stylistics analysis are given from the first two extracts.

The first usability problem in comprehensibility is the mathematical equation. The segmentation of the units of translation is shown in Table 7. In the ST the word order in the sentence lacks a word class: SV(O)C. This caused a confusion for the reader about what is being measured in the test. The reader has to guess the missing object in the ST. The end of the paragraph alludes to the missing object: 'until the bonding loosened or the snow guard cracked'. The following paragraph introduces the usability problem in ST, in the first draft (D1) and in the second draft (D2):

- **ST:** *Rasitustestissä kappaleet asetettiin ensin 1,2 x suunnittelukuorman rasitukseen (5000N / 4kpl x 1,2 = 1500N), jossa mitattiin taipuma ja tutkittiin, että este on ehjä. Tämän jälkeen voimaa lisättiin niin kauan, että kiinnitys antoi periksi tai lumieste rikkoutui.* (SeAMK 2016: 3)
- **D1:** 'In a straining test the objects were set in a strain of 1,2 x design load (5000N / 4 pcs x 1,2 = 1500 N). It measured snow guard's bending property. In the test was also examined that the snow guard is not damaged. Next the force was increased until the yield point in which either the bonding loosened or snow guard cracked.' (page 4)
- **D2:** 'First, each object was individually set in a design load of 1,2 coefficients (5000N / 4 pcs x 1,2 = 1500 N). The test measured the bonding's bending property. In the test was also examined that the snow guard is not damaged. Next, the objects were set under the breaking load in which the force was increased to the yield point until either the bonding loosened or the snow guard cracked.' (page 4)
- **D2 the reference:** N = Newton. In the actual conditions the snow guards are bonded on to the roofing sheet of a house by installing four pieces per a meter.

Table 7. Segmentation of text into units of translation: The first usability problem in comprehensibility is fixed in the second draft. Lexical item + a preposition denotes the Finnish case suffix.

ST (Finnish) [backtranslation]		TT (English)
Rasitustestissä [A load test + in]	1	
kappaleet asetettiin ensin [the objects were placed first]	2	First, each object was individually set in
1,2x suunnittelukuorman rasitukseen [1,2 x a design load's a load + in to]	3	a design load of 1,2 coefficients
(5000N / 4kpl x 1,2 = 1500N) [(5000N / 4 pcs x1,2 = 1500 N)]	4	(5000N / 4 pcs x1,2 = 1500 N).
	5	[1] N = Newton. In the actual conditions the snow guards are bonded on to the roofing sheet of a house by installing four pieces per a meter.
jossa mitattiin taipuma [in which was measured the bending]	6	The test measured the bonding's bending property.
ja tutkittiin, [and was examined]	7	In the test was also examined
että este on ehjä [that a barrier is intact]	8	that the snow guard is not damaged.

Tämän jälkeen [this + of after]	9	Next
	10	the objects were set under the breaking load in which
voimaa lisättiin [force was increased]	11	the force was increased
niin kauan että kiinnitys antoi periksi [so long that the bonding gave in]	12	to the yield point until either the bonding loosened
tai lumieste rikkoutui. [or the snow guard broke down]	13	or the snow guard cracked.

In Table 7 the first translation unit is omitted in the TT because the paragraph's coherence needed fixing. If the '(design) load test' were translated, then the paragraph would have needed and addition of 'breaking load test' which is missing from the ST due to its complex sentence structure. The units of translation number 2, 4, 7 and 11 are literal translations. The units of translation 2 and 6 are also direct translations, only in the number 2 the word order is changed and in the number 6 is an addition 'property'. The unit of translation 4 needed an explanative reference for the mathematical equation which the teacher found confusing. Modulation occurs in the units of translation 8, 9, 12 and 13. The number 8 is a negation of opposite, number 9 is a reversal of terms, the numbers 12 and 13 are modulations from abstract to concrete.

The second usability problem in comprehensibility occurred in the Purpose-paragraph. According to the translator there were article and conjugation errors. The complicated ST sentence structure influenced the false sentence structure in the first draft. The purpose of the test was described with a conjugation 'if'; contrarily to the first draft suggestion of the tentative 'may be the case', the temperature variation does have an influence on to the behavior of the snow guards and their bonding. The purpose of the test, after all, was to examine the level of that influence.

Another usability problem in the Purpose-paragraph was a missing information that the reader must guess. In the paragraph is told which test procedures are performed in the environmental chamber but the material's testing machine is left without the purpose. Later, under the description of 'test procedure' the ST unexpectedly tells about the design load test. The design load test is run in the Zwick 100kN but this neither is told in the

paragraph. However, it can be seen from the pictures and the charts that the design load was run with the material's testing machine Zwick 100 kN. The solution to fix the vagueness was to add an explanation in the end of the paragraph. The following excerpts introduce the Purpose-paragraph:

- **ST:** 'Tarkoituksena oli tutkia lämpötilavaihtelujen vaikutusta lumiesteen ja kiinnityksen käyttäytymiseen pakastus/sulatus menetelmällä, jonka jälkeen lumiesteiden kiinnipysyvyys ja kestävyys testattiin aineenkoestuskoneella estettä rasittaen. ' (SeAMK 2016: 2)
- **D1:** 'The purpose of the test was to examine if a temperature adjustment have an effect on the performance of snow guards and assembly's resistance. The test began with a method on freezing and thawing performance of snow guards attached on roofing sheet. Next, the objects' assembly and resistance properties were stressed in materials testing machine.' (page 3)
- **D2:** 'The purpose of the test was to examine the level of an effect that a temperature variation has on the behavior of the snow guards and the assembly. First, the test began with a freezing–thawing method ran on the snow guards that were attached on to the roofing sheet. Next, the resistance and the adherence of the test objects were tested in the load of a material's testing machine. The freezing–thawing test purpose is to simulate the weather conditions. The load test's purpose is to simulate snow load.' (page 2)

Table 8. Segmentation of text into units of translation: The most severe usability problem in comprehensibility discovered with the translation strategy. Lexical item + a preposition denotes the Finnish case suffix

ST (Finnish) [backtranslation]		TT (English)
Tarkoituksena oli tutkia [A purpose + as was to examine]	1	The purpose of the test was to examine
lämpötilavaihtelujen vaikutusta [the temperature variations + of the effect + of]	2	the level of an effect that a temperature variation has on
lumiesteen ja kiinnityksen käyttäytymiseen [the snow guard's and the assembly's the behavior + to]	3	the behavior of the snow guards and the assembly.
	4	First, the test began
pakastus/sulatus menetelmällä [freeze/thaw method + with]	5	with a freezing–thawing method
	6	ran on the snow guards that were attached on to the roofing sheet.

jonka jälkeen [which after]	7	Next
lumiesteiden kiinnipysyvyys [the snow guards' adherence]	8	the resistance and the adherence of the test objects
ja kestävyys testattiin [and resistance were tested]	9	were tested
aineenkoestuskoneella [a material's testing machine + with]	10	a material's testing machine
estettä rasittaen. [a guard + of load + an instructive]	11	in the load of
	12	The freezing–thawing test
	13	purpose
	14	is
	15	to simulate
	16	the weather conditions.
	17	The load test's
	18	purpose
	19	is
	20	to simulate
	21	snow load

In Table 8 the units of translation number 1–3 and 5 are direct translations. Also, the units of translations 8–11 are direct translation but there is a change in word order. The additions are translation units 4 and 11–21. The translation unit 7 is a modulation a reversal of terms.

The third usability problem in comprehensibility is discovered with the translation strategy by defining the object more accurately. In the beginning of the first draft is told that the test consists of objects and test object. However, in the conclusions is referred to 'comparison and actual objects'. This is fixed in the second draft. 'Objects' refer to all snow guards bonded on to the roofing sheet. 'Test objects' refer to the first half of objects set in the test by freezing–thawing method and the other half of the objects left aside are referred to as 'comparison objects'. In the following example of the excerpt is shown the confusion which the different terms cause in the first draft:

- **ST:** '*Tutkittaessa vertailu- ja varsinaisten testikappaleiden tuloksia 1,2-kertaisella suunnittelukuormalla, voidaan todeta, että kaikki muut kappaleet käyttäytyivät hyvin samalla tavalla.*' (SeAMK 2016: 10)

- **D1:** 'Finally the test results on comparison and actual objects with 1,2 design load were examined. According to test results, the objects had an equivalent performance.' (page 10)
- **D2:** 'Finally, the test results of the 1,2-coefficient design load were examined on the comparison objects and the test objects. It is discovered that all objects had an equivalent performance.' (page 10)

The fourth usability problem in comprehensibility results also in the conclusion. The ST expresses vaguely what had happened in the test. In the first draft the vagueness resulted with a confusing preposition cluster. In the second draft an explanation simplifies the transferred meaning. The terms are defined in the second draft, therefore it is needless to use 'the freezing–thawing test' but it is sufficient to use 'test objects'. The excerpts are given in the following paragraph:

- **ST:** *'Paitsi pakastus/sulatustestin kappale No: 10, joka kesti suunnittelukuorman, mutta irtosi ennen 1,2-kertaista suunnittelukuormaa.'* (SeAMK 2016: 10)
- **D1:** 'Only one different performance occurred with the object No. 10 on freezing–thawing test. The object endured design load but came off of its bonding before the test strain was increased into 1,2 coefficient.' (page 10)
- **D2:** 'Only one different performance occurred with the test object No. 10 which endured the design load, but its bonding unfastened before the load reached the 1,2-coefficient.' (page 10)

The implementation of the translation strategy revealed also that the poorly structured sentences in the ST had a more severe effect on to the cohesion – "the flow of words". The consistency in using the same terms instead of multiple different is one of the changes done in the second draft. For example, in the title the term 'adjustment' was changed into 'resistance' and choosing either 'a freezing-thawing method' or 'a freeze-thaw procedure'. The manager suggested to use 'temperature fluctuation' instead of the 'adjustment'. However, the concept does not follow a simple medium which would be confusing for Pauli. Therefore, a solution is to specify the term into 'temperature variation'. Similarly, a change of terms in a more scientific concept for the nouns 'strain' and 'straining' is done in the second draft. The scientist defined the correct term as the noun 'load' which is also a simple choice for a layman.

Using a concept of 'the objects' or 'the snow guards' can confuse the reader to understand the text refers to all ten snow guards. Instead, as the testing methods were run only on five of the snow guards whilst the other five snow guards were meant for comparison – therefore, in the second draft 'objects' refer to all the ten snow guards attached on to the roofing sheet. Furthermore, the 'test objects' refer to the ones that were tested in the freezing–thawing method and the 'comparison objects' refer to the ones that were excluded from the freezing–thawing method.

There were a few usability problems in the legibility that were fixed in the second draft. The connection information of SeAMK in the footer took a large space. Therefore, the postal address, for example, are given on the page 2 instead of the footer. Also, the manager had requested picture captions which were added on each picture.

As the ST is a technical field's text, the direct translation is used in many expressions. *Borrowing* is used in the pronouns such as Satula, Kulo1 and Pural. Also, *calque* is used once for the '*standardi SFS-EN491*' → [standard SFS-EN492]. Machines and objects are translated with the procedure of *literal translation*, for example, '*satulamalli*' → [a saddle model], '*aineenkoestuskone*' → [a material's testing machine], and '*suunnittelukuorma*' → [a design load]. However, literal translation is also used in expressions such as '*mahdolliset vauriot*' → [possible damages] or '*tarkoituksena oli tutkia*' → [The purpose was to examine].

The procedure of transposition was used in, for example, '*paitsi*' [execpt] a conjugation → into an adverb 'only'. A longer ST noun phrase of '*valmiiksi liimatut tuotteet*' [ready bonded products] is translated into a verb 'had bonded'. Also, the ST 'summittain' [roughly] adverb is in TT as adjective 'at random'.

The idea of the UCT methods is to improve the interaction between user and product, not on assessing the text's producers and users (Suojanen et al. 2015: 125). The end-users will remember the test report when it is written in a comprehensible vocabulary. Transferring the correct meaning of the message requires textual elements that are functional at the grammatical and stylistic level of the text. Thus, the careful analysis of

the word classes rendered detailed information that enhanced the translation's usability. The careful analysis of the word classes also showed that the first draft translation was loyal to the ST confusing structures which caused a false organization and confusing sentence structures also in the first draft.

4.6 Found usability problems: the list of heuristics

The list of heuristics is a tool to check the remaining usability problems in the second draft. The evaluation highlights if there is a match between translation and the end-user's needs. The list of heuristics aids me to check if the conventionalities and the coherence of the target text. Each usability problem found in the are evaluated separately and rated according to the following Nielsen's (1995) five-point severity rating scale given in the UCT (Suojanen et al. 2015: 80) I will also give options on the translation solutions for the found problems. The severity rating scale is given once more in the following paragraph:

0 =	I don't agree that this is a usability problem at all;
1 =	Cosmetic problem only: need not be fixed unless extra time is available on the project;
2 =	Minor usability problem: fixing this should be given low priority;
3 =	Major usability problem: important to fix, so should be given high priority;
4 =	Usability catastrophe: imperative to fix this before product can be released.

The match between translation and user's needs is observed carefully in this study in the match does occur in the second draft. In the conclusion is observed that 'The breaking load test results show that there are no major differences between the comparison and the test objects.' This would have required a summarizing statement for the user about the purpose and the meaning of the test results. The user can guess the connection from the title and the Purpose-paragraph in the beginning of the test report. However, as the aim is

to create a translation that is usable, there should not exists any vagueness. Therefore, the severity rating for the match between translation and specification is 2.

The translation's genre is report that is publicly available. Therefore, it is aimed for both experts and layman in the construction industry. There are terms that clearly represents the LSP, but the meaning is simple, thus a layman can also understand. The picture captions ensure that the message is transferred. The medium of language is mostly commonly understood, simplified English. The severity rating of the language conventionalities is 0, I don't agree that this is a usability problem at all.

On the page 4, in the paragraph of Procedure, the mathematical equation has a reference: 'N = Newton. In the actual conditions the snow guards are bonded on to the roofing sheet of a house by installing four pieces per a meter.' In the case of the genre, Elaborating the abbreviation N suits because not every user knows what it stands for. However, the specifying explanation should be said elsewhere. The topic of the test report is different. Another place for the explanation could be given, for example, on the same website page beside of the link for the TT test report. In addition, the explanation needs also a further remark on the building's durability which is a different matter than the snow guard's durability. Each has country specific regulations of both maximum capacities. Therefore, the severity rating of this usability problem is 1, a cosmetic problem that can be fixed if there is extra time.

The translation has minor usability problems in coherence. Majority of the terms are consistent, but a few concepts were described with various terms. For example, 'bond', 'adhesive', 'bonding' and 'adherence' all refer to Kulo 1 adhesive. The confusion that the multiple term variations cause is observed on page 4: "The test measured the bonding's bending property". The 'bonding – bending' is an awkward expression. A more usable expression is "The test measured the bending property of adherence," or bond/adhesive, depending on which noun is eventually chosen.

Another confusing sentence is on the page 4: "Next, the objects were set under the breaking load in which the force was increased…". The confusion is due to a lack of

words, specifically in the preceding page. If 'the design load test and the breaking load test' would be mentioned on page 3, the meaning of the tests performed in the material's testing machine is clear in the rest of the test report. The sentence on page 3 should be fixed, for example in a following manner: 'The resistance and adherence (properties) ~~test~~ were (tested in a design load test and in a breaking load test. The tests were) performed in a material's testing machine, Zwick 100kN'. The severity of the usability problems in the coherence are not catastrophic nor do they change the purpose of the message. The usability problems in the coherence should be fixed, therefore the severity is 2.

A positive observation is that the vocabulary does suit to the client's product because it is simple. The overly complex structure and overly complex vocabulary are avoided in the second draft. The terms used in the translation are a good beginning for the client's company-specific terminology list because the topic of the test report is about one of the main characteristics of the Kulo snow guards. The severity of the found usability problems in the TT are minor which do not cause serious mistakes in transferring the message. The best tools that enabled to build the terminology was the questionnaire, the personas and the list of heuristics because each highlighted different perspectives that affected in the usability.

In this chapter, I have discussed the function of the ST and introduced the personas I developed. In this chapter I discussed the usability problems in the first translation draft and in the second translation draft of the test report. First, I analyzed the feedback I received via the questionnaire. Second, I analyzed the level of severity of the usability problems found via the list of heuristics.

5 CONCLUSIONS

In this thesis, I ran a translation process in which the self-produced translation's usability was evaluated, and the information on the user was collected iteratively. The translation process was based to the entire method of user-centered translation (UCT) by Suojanen, Koskinen and Tuominen (2015). My aims were to the evaluate the usability of the translation and to form a small terminology list for the client. The client of this study, Kulo Snow Guards Ltd., has recently enlarged their trading outside the Nordic countries into other member countries in the EEA. Therefore, the company needs English translations. The client still lacks a company-specific terminology. It was developed in this study by using a Simplified Technical English and the models of UCT. My research questions were: 1) How severe are the usability problems of the self-produced translation, 2) How should the most severe usability problems be fixed and 3) In which manner does the usability affect in the development of the terminology?

Before the translation process began, I planned the translation need and made a specification with the client of the translation. On the basis of the information gathered with the client, I developed so called personas that represent the expected target audience. The next phase in the translation process was to translate the first draft of the test report by following the STE-guidelines and with the help of the developed personas. I chose to translate the first draft without any translation strategy. The aim was to receive external feedback from the language experts in the questionnaire to verify that my weaknesses as a novice translator are noted. The feedback emphasized the most problematic areas in the first draft that otherwise could be missed.

When the first draft was done, I sent it for a few external evaluators. They represented the target audience, the real user. Together with the first draft was also sent a questionnaire that I had developed for the study. The topic of the questionnaire is about the first draft's usability qualities and the characteristics of a user. After receiving the participants answers, I polished the translation according to the received feedback.

In the third phase of the translation process, I added a translation strategy in translating the second draft, the comparative stylistic analysis by Vinay and Darbelnet (1995). After the second draft was done, I checked its usability via a list of heuristic crafted by me for this study. The found usability problems were analyzed by their level of severity, in the scale from 0 to 4.

The textual features measured in the ST show that the intratextual reader of the test report is both national and international. The test report is meant to be readable which is the most important feature of a text aimed at a wide public audience. The test report in SL has many textual features of language for special purpose: long sentences, long compound nouns and many LSP pronouns of the machines used in the test procedure. However, the ST does have many features of standard language which balances the linguistic complexities.

The findings in the first draft revealed that the personas reflected the target audience's needs quite well because the translation did reflect the message of the ST. Therefore, the specification and the analyzed intratextual reader positions aid the translator in aiming the translation for the end-user. However, the first draft translation was loyal to the ST's confusing sentence structures which caused a false organization. The feedback gained from the external participants was important information to observe the problems that affected negatively in the text's usability. It was more successful to specify the translation towards the real end-user's needs together with the personas and with the feedback. Thus, having 4 external participants in a small-scale study was enough and efficient for a small-scale translation process.

The findings in the second draft revealed that the list of heuristics is a tool for a translator to find more usability problems from the translations that would have been missed without its usage. To ensure that the end-users remember the message of the test report, the translation's comprehensibility, readability and the legibility must be enhanced. Therefore, the text must be functional at the grammatical and stylistic level. The severity of the found usability problems in the TT are minor which do not cause serious mistakes in transferring the message.

The results of this study indicate that the methods of user-centered translation can be implemented efficiently in a single, small translation process without spending great amount of time. The UCT gives valuable perspectives to understand a translation as an independent text without lessening the translation process itself. On the contrary, it is rewarding for the translator to realize the reader positions that the various tools emphasize. The tools used in this study are functional in practice.

The main limitations of the study are connected also to time and space of a thesis. For example, the company-specific terms could have been presented in a mind map. However, although the terms are not in a mind map, the client will be able to use the terms elsewhere, too. For example, enhancing the website's visibility requires a concise usage of terminology so that the search engines can spot the terms. In the list of heuristics could have been added a part in which a translator is able to check the translation problems they are accustomed to make.

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Please see appendices 2 and 3 for the self-produced translations.

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APPENDICES

Appendix 1. The Questionnaire

1

QUESTIONNAIRE

This questionnaire concerns about a translation quality of two reports. The questionnaire is part of research material in Master's Thesis, hence the answers play an important role in its results. **Everything will be treated anonymously**.

Both reports' subject is construction engineering. They describe a testing process of different attachment methods on polycarbonate snow guards. Both of them are lengthy due to pictures and tables. The body text is quite similar to each other. It should take from you to answer approximately 60 minutes.

The purpose of the translation is to convey *simple and clear information* about snow guard's properties for an international audience. Therefore, the text should be understandable and smooth to read. Your task is to read the translations and report via this questionnaire about the possible ambiguities and thoughts it brought into your mind.

Also, the purpose of this questionnaire is to gather some information about an international user of construction materials. As mentioned before, everything will be treated anonymously. The material helps the translator to make effective but good-quality translation decisions.

The questionnaire has three parts: **Part 1** is about the user (that is, you), **Part 2** about Test Report on Bolts, and **Part 3** about Test Report on Bond. Read the whole Test Report and answer the questions. The questions are **bolded**. Instructions are written in *italics*. Part 2 and Part 3 have the same questions.

Part 1: user

1.1 Gender

○ Male   ○ Female

1.2 Age

○ 20–26   ○ 27–35   ○ 36–45   ○ 46–55   ○ 56–67   ○ 68–80

1.3 Mother tongue

○ Danish   ○ Dutch   ○ English   ○ Finnish   ○ French   ○ German

○ Italian   ○ Norwegian   ○ Russian   ○ Spanish   ○ Swedish

○ Other or bilingual, please type in the box which one:

1.4 In your opinion, what is your level of English skills on *reading*?

○ Basic 1   ○ Basic 2

○ Independent 1   ○ Independent 2

○ Proficient 1   ○ Proficient 2

1.5 In your opinion, what is your level of English skills on *speaking*?

○ Basic 1   ○ Basic 2

○ Independent 1   ○ Independent 2

○ Proficient 1   ○ Proficient 2

1.6 In your opinion, what is your level of English skills on *comprehension*?

○ Basic 1   ○ Basic 2

○ Independent 1   ○ Independent 2

○ Proficient 1   ○ Proficient 2

1.7 How often do you use English?

○ Once a month or less   ○ Few times in a month   ○ Weekly   ○ Daily

1.8 How knowledgeable are you about construction terminology in your mother tongue?

○ Not at all   ○ Slightly   ○ Somewhat   ○ Very

1.9 Is construction terminology familiar to you in English?

○ Not at all   ○ Slightly   ○ Somewhat   ○ Very

1.10 Have you ever had to read such documents as test reports?

○ Not at all   ○ Slightly   ○ Somewhat   ○ Very

Part 2: Test Report on Bolts

Now you should read first the test report and the questions before answering.

2.1 Should the language be simpler or more specific?

○ Simpler   ○ More specific   ○ It is good as it is

2.2 Are there any awkward, hard-to-read sentences? *If you need to read something twice or more, there is something wrong in the translation. You may mention the part in the box. Please, refer to it by page number, and in which paragraph it is.*

2.3 Are there any conceptual or factual errors? *Please, refer to it by page number, and in which paragraph it is.*

2.4 Are there any problems in the way the text is arranged on the page? *You may choose more than one.*

☐ Spacing   ☐ Indentation   ☐ Margins   ☐ It is good as it is

☐ Other, please type in the box what:

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2.5 Are there any problems of text formatting? *You may choose more than one.*

☐ Bolding   ☐ Italics   ☐ Font type   ☐ Font size
☐ It is good as it is

☐ Other, please type in the box what:

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2.6 Are there any problems in the way the report as a whole is organized? *You may choose more than one.*

☐ Page numbering   ☐ Headers   ☐ Footnotes   ☐ Pictures   ☐ Tables

☐ It is good as it is

☐ Other, please type in the box what:

The specialists' questionnaire continues with three more questions:

2.7 Does the translation reflect the message of the source text?

2.8 Has anything critical been left out? Or vice versa, added something that does not belong there?

3.9 Is the translation logical – is there any nonsense?

3.10 Feel free to comment on anything that bothers you on the report:

The questionnaire ends here.
Thank you very much for your time and effort!

Appendix 2. The first draft of the test report

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1

Test Report

Kulo Snow Guards

Temperature adjustment test
on the performance of a bond attached snow guard

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2

Customer:	**Kulo Snow Guards / Uusi Hansa Ltd.**
Address:	Koivistonkyläntie 74,
	61310 Panttila
	FINLAND

Test Operator:	Seinäjoki University of Applied Sciences
	School of Technology
Address:	Kampusranta 9 A
	60320 Seinäjoki
	FINLAND

Contact Person:	Project manager Martti Ala-Louko
Phone:	+358 40 830 4242

Test Objects:

There were ten (10 pcs.) *Satula* Saddle model of Kulo Snow Guards. All of them were attached on a roofing sheet by Kulo1 bonding. The roofing sheet is treated with Pural coating.

Seinäjoki University of Applied Sciences
School of Technology
Add. Kampusranta 9, Frami 1
60320 Seinäjoki, FINLAND
Postal add. P.O. BOX 6
FI-60101 Seinäjoki, FINLAND

Construction Laboratory
Add. Juhonkatu 5
60320 Seinäjoki, FINLAND

phone# +358 20 124 5000
fax. +358 20 124 4909
tekniikka@seamk.fi

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Purpose:

The purpose of the test was to examine if a temperature adjustment have an effect on the performance of snow guards and assembly's resistance. The test began with a method on freezing and thawing performance of snow guards attached on roofing sheet. Next, the objects' assembly and resistance properties were stressed in materials testing machine.

Date of the Test:

January – February 2016

Methods and Device:

The test was done according to a freezing-thawing method of standard SFS-EN 491 in paragraph 5.8.

A half of the objects (5 pcs.) were tested in the freeze-thaw procedure and the other half (5 pcs.) was left as a comparison.

The test was performed in a Construction Laboratory of Seinäjoki University of Applied Sciences, Finland. Freezing was performed in ACR-1500 environmental chamber in -20°Celcius. Thawing was performed by sinking the object into a water bucket.

Materials testing machine, Zwick 100kN.

Seinäjoki University of Applied Sciences
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60320 Seinäjoki, FINLAND
Postal add. P.O. BOX 6
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Construction Laboratory
Add. Juhonkatu 5
60320 Seinäjoki, FINLAND

phone# +358 20 124 5000
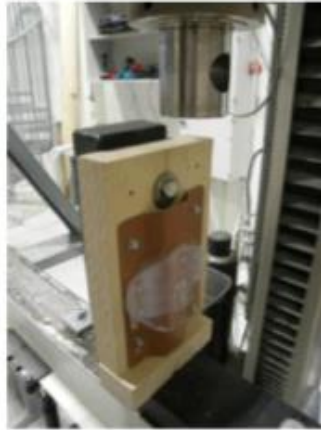fax. +358 20 124 4909
tekniikka@seamk.fi

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Material selection:

The client sent in snow guards that were bonded on roofing sheets. The objects for tests were chosen at random.

Test procedure:

In straining test the objects were set in a strain of 1,2 x design load (5000N / 4 pcs x 1,2 = 1500 N). It measured snow guard's bending property. In the test was also examined that the snow guard is not damaged.

Next the force was increased until the yield point in which either the bonding loosened or snow guard cracked.
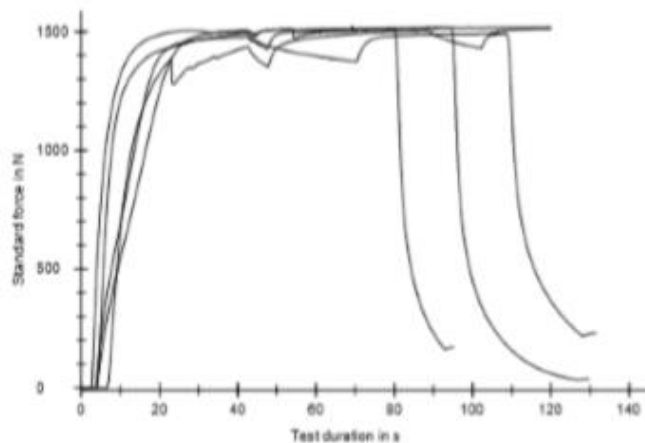
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The Results of Test Period:

Comparison Objects: 1,2 Design Load

Customer	: Kulo Snow Guards / Uusi Hansa Oy
Tester	: Ala-Louko Martti
Test standard	: creep
Material	: Bonded snow guard; comparison objects 1,2 design load
Machine data	: 100L3S WN:131494
	Crosshead travel monitor WN: 131494
	Force sensor ID: 0 WN:131495 100kN

Results:

Nr	F-total N	s-total mm
1	1491,45	3,96
2	1508,44	2,80
3	1509,65	2,60
4	1510,00	5,21
5	1509,13	4,47

Series Graphics:

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Freeze-thaw Objects: 1,2 x Design Load

Customer	: Kulo Snow Guards / Uusi Hansa Oy
Tester	: Ala-Louko Martti
Test standard	: Creep
Material	: Bonded snow guard; comparison objects 1,2 design load
Machine data	: 100L3S WN:131494
	Crosshead travel monitor WN: 131494
	Force sensor ID: 0 WN:131495 100kN

Results:

Nr	F_{total} N	s_{total} mm	
6	1509,99	3,4	
7	1508,79	3,1	
8	1507,58	2,4	
9	1509,65	4,3	
10	1437,32	11,26	Snow guard loosened

Series Graphics:

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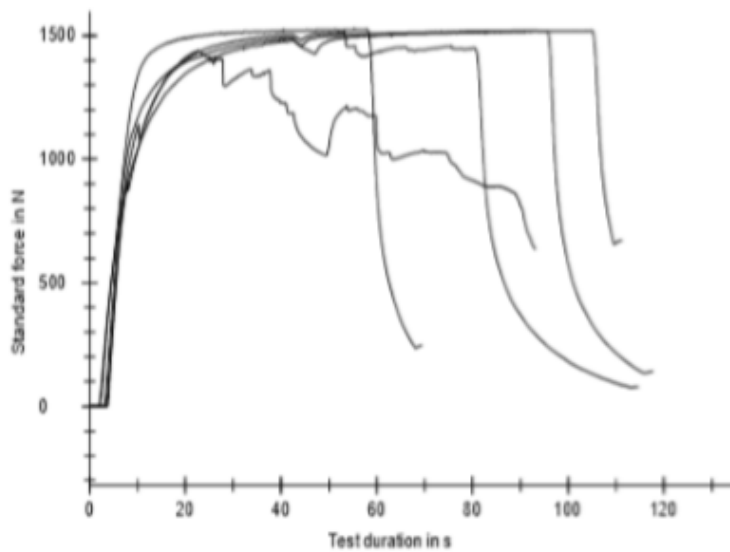
After the test, the results were measured of each object. First was examined each object's creep into their initial shape after the yield point. Next the objects were examined for possible damages.

No:	Comparison object	No:	Test object
1	-0,3 mm	6	-0,2 mm
2	-0,4 mm	7	-0,3 mm
3	-0,3 mm	8	-0,1 mm
4	-0,2 mm	9	-0,5 mm
5	-0,2 mm	10	-1,1 mm

Because of the flexible bond, all the objects got back to their initial condition after straining process. Therefore, there were no visible damages on snow guards.

The test object no. 10 came off mainly out of its bonding in 1437N force.

Noticeable is that the thickness of bonding's seal clearly had an effect on the snow guard's creep in 1500N force.

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The Results of Test Period:

Comparison objects: Breaking Load

Parameter Table:
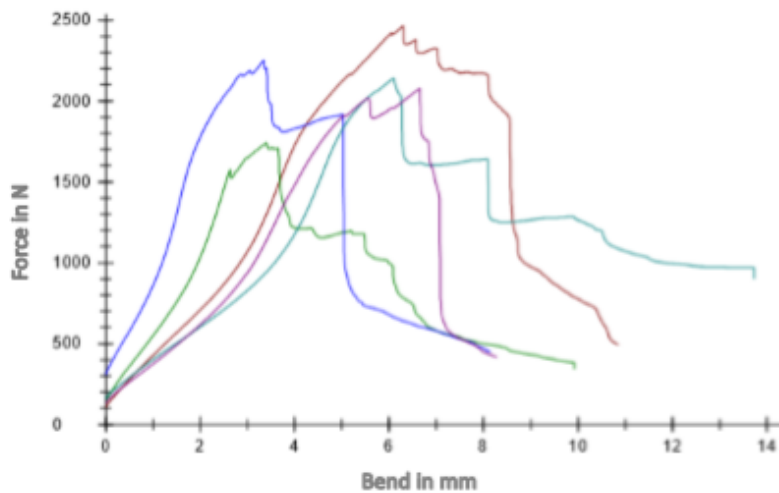
Customer	: Kulo Snow Guards / Uusi Hansa Oy
Tester	: Ala-Louko Martti
Test standard	: Compressive strength
Material	: Bonded snow guard; comparison objects
Machine data	: 100L3S WN:131494
	Crosshead travel monitor WN: 131494
	Force sensor ID: 0 WN:131495 100kN

Results:

Nr	Fmax. N	Agt mm
1	2465,99	6,75
2	1740,05	3,78
3	2250,72	3,69
4	2140,50	6,92
5	2076,02	7,27

Statistics:

Series n = 5	Fmax. N	Agt mm
x	2134,66	5,68

Series Graphics:

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Freeze-Thaw Objects: Breaking Load

Parameter table:
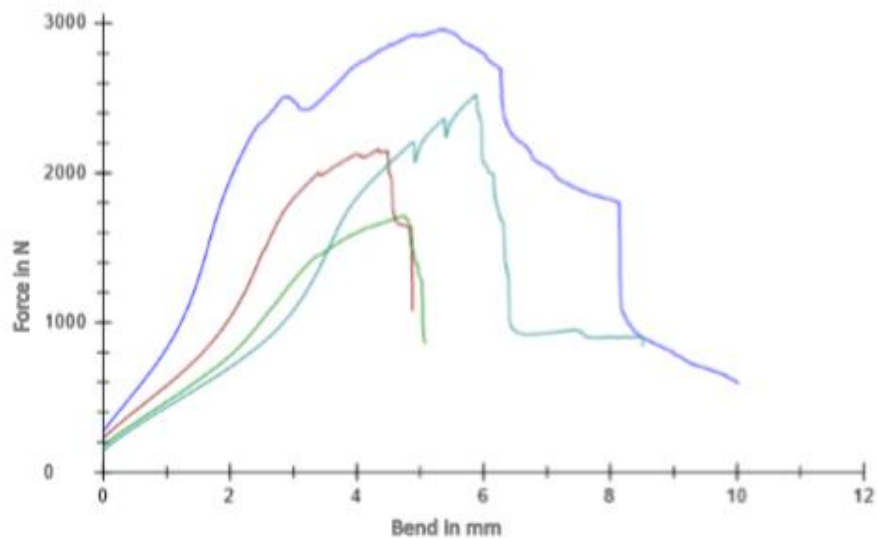
Customer	: Kulo Snow Guards / Uusi Hansa Oy
Tester	: Ala-Louko Martti
Test standard	: Compression strength
Material	: Bonded snow guard; After freezing-thawing test
Machine data	: 100L3S WN:131494
	Crosshead travel monitor WN: 131494
	Force sensor ID: 0 WN:131495 100kN

Results:

Nr	Fmax. N	Agt mm	
6	2160,11	4,32	
7	1715,63	4,78	
8	2959,12	5,81	
9	2523,59	6,48	
10	1437,32	11,26	Bonding yielded

Statistics:

Series n = 5	Fmax. N	Agt mm
x	2159,15	6,53

Series Graphics:

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Conclusions:

Finally the test results on comparison and actual objects with 1,2 design load were examined. According to test results, the objects had an equivalent performance. Only one different performance occurred with the object No. 10 on freezing–thawing test. The object endured design load but came off of its bonding before the test strain was increased into 1,2 coefficient.

The object No. 10 on freezing–thawing test was left out when defining the breaking load. Its breaking load was already found in 1,2 coefficient on design load. The result was recorded in breaking load results.

The results show that there are no major differences in between the comparison and test objects.

In Seinäjoki, Finland on 21st March 2016

Martti Ala-Louko
project manager

Appendix 3. The second draft of the test report

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1

Test report

Kulo Snow Guards

**Temperature resistance test
on the performance of a bond attached snow guard**

2

Customer:	**Kulo Snow Guards / Uusi Hansa Ltd.**
Address:	Koivistonkyläntie 74,
	61310 Panttila
	FINLAND
Test Operator:	Seinäjoki University of Applied Sciences
	School of Technology
Address:	Kampusranta 9 A
	60320 Seinäjoki
	FINLAND
Postal Address:	P.O. BOX 6
	FI-60101 Seinäjoki, FINLAND
Contact Person:	Project manager Martti Ala-Louko
Phone:	+358 40 830 4242
Objects:	There were ten objects (10 pcs.) of the SATULA saddle models of Kulo Snow Guards. All of them were bonded on to a roofing sheet by Kulo1 adhesive. The roofing sheet is treated with a Pural coating.
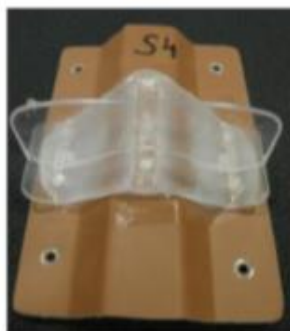
Picture 1. The object: SATULA snow guard bonded on to a roofing sheet by Kulo1 adhesive.

Purpose: The purpose of the test was to examine the level of an effect that a temperature variation has on the behavior of the snow guards and the assembly. First, the test began with a freezing–thawing method ran on the snow guards that were attached on to the roofing sheet. Next, the resistance and the adherence of the test objects were tested in the load of a material's testing machine. The freezing–thawing test purpose is to simulate the weather conditions. The load test's purpose is to simulate snow load.

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3

Date of the Test:	January – February 2016
Methods and Device:	The test was performed according to a freezing-thawing method described in a paragraph 5.8 of the of standard SFS-EN491.
	One half of the objects (5 pcs.) was tested according to the freezing-thawing method and the other half (5 pcs.) was left for a comparison.
	The test was run at the Construction Laboratory of Seinäjoki University of Applied Sciences, Finland. The freezing test was performed in an ACR-1500 environmental chamber at -20° Celsius. The thawing test was performed by sinking the objects into a bucket filled with water.
	The resistance and adherence test were performed in a material's testing machine, Zwick 100kN.

Picture 2. The test objects in an ACR-1500.

Material selection:

The client sent in the snow guards which the client had bonded on to the roofing sheets with Kulo 1 adhesive. The test objects were chosen at random.

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4

Test procedure:

First, each object was individually set in a design load of 1,2 coefficients (5000N / 4 pcs x 1,2 = 1500 N)[1]. The test measured the bonding's bending property. In the test was also examined that the snow guard is not damaged.

Next, the objects were set under the breaking load in which the force was increased to the yield point until either the bonding loosened or the snow guard cracked.

Picture 3. The object set in the design load.

Picture 4. The object set in the breaking load.

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[1] N = Newton. In the actual conditions the snow guards are bonded on to the roofing sheet of a house by installing four pieces per a meter.

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The results of test period:

Comparison objects: 1,2 design load
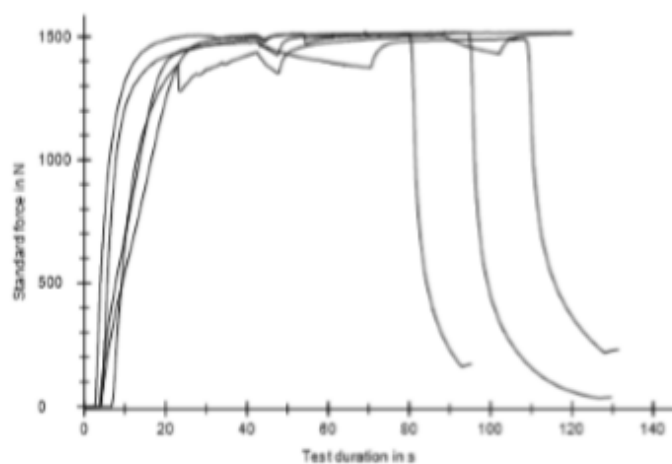
Customer	: Kulo Snow Guards / Uusi Hansa Oy
Tester	: Ala-Louko Martti
Test standard	: creep
Material	: Bonded snow guard; comparison objects 1,2 design load
Machine data	: 100L3S WN:131494
	Crosshead travel monitor WN: 131494
	Force sensor ID: 0 WN:131495 100kN

Results:

Nr	F-total N	s-total mm
1	1491,45	3,96
2	1508,44	2,80
3	1509,65	2,60
4	1510,00	5,21
5	1509,13	4,47

Series graphics:

Series graphics:

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Test objects: 1,2 design load

Customer	: Kulo Snow Guards / Uusi Hansa Oy
Tester	: Ala-Louko Martti
Test standard	: Creep
Material	: Bonded snow guard; comparison objects 1,2 design load
Machine data	: 100L3S WN:131494
	Crosshead travel monitor WN: 131494
	Force sensor ID: 0 WN:131495 100kN

Results:

Nr	F total N	total mm	
6	1509,99	3,4	
7	1508,79	3,1	
8	1507,58	2,4	
9	1509,65	4,3	
10	1437,32	11,26	Snow guard loosened

Series graphics:

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After the design load tests, each object's resistance and adherence results were measured. First was examined the object's return from the yield point into their initial shape. Next was examined the objects' possible damages.

No:	Comparison object	No:	Test object
1	-0,3 mm	6	-0,2 mm
2	-0,4 mm	7	-0,3 mm
3	-0,3 mm	8	-0,1 mm
4	-0,2 mm	9	-0,5 mm
5	-0,2 mm	10	-1,1 mm

Because of the flexible bonding, each object got back from the load into its initial shape. Therefore, there were no visible damages on the snow guards.

The object No.10's bonding was almost unfastened at the 1437N force.

A noticeable result is that the thickness of the bonding's seal clearly had an effect on the snow guard's creep at the 1500N force.

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The results of test period:

Comparison objects: breaking load
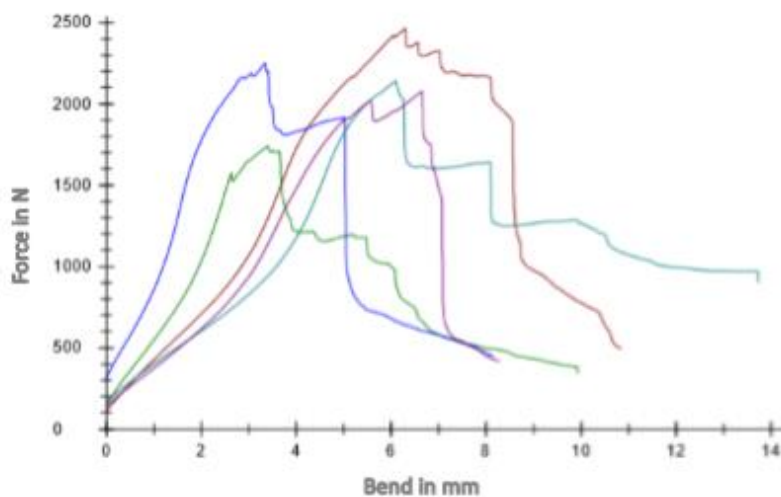
Parameter table:

Customer	: Kulo Snow Guards / Uusi Hansa Oy
Tester	: Ala-Louko Martti
Test standard	: Compressive strength
Material	: Bonded snow guard; comparison objects
Machine data	: 100L3S WN:131494
	Crosshead travel monitor WN: 131494
	Force sensor ID: 0 WN:131495 100kN

Results:

Nr	Fmax. N	Agt mm
1	2465,99	6,75
2	1740,05	3,78
3	2250,72	3,69
4	2140,50	6,92
5	2076,02	7,27

Statistics:

Series n = 5	Fmax. N	Agt mm
x	2134,66	5,68

Series graphics:

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9

Test objects: breaking load
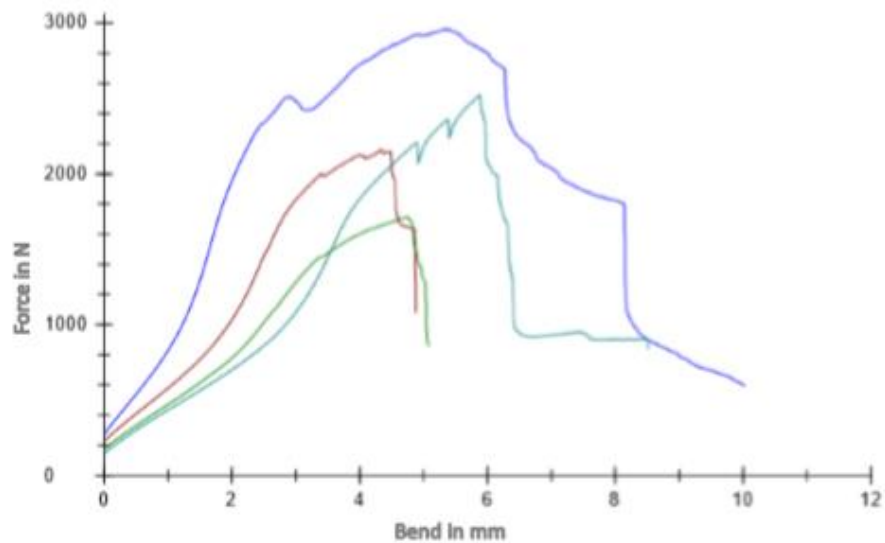
Parameter table:

Customer	: Kulo Snow Guards / Uusi Hansa Oy
Tester	: Ala-Louko Martti
Test standard	: Compression strength
Material	: Bonded snow guard; After freezing-thawing test
Machine data	: 100L3S WN:131494
	Crosshead travel monitor WN: 131494
	Force sensor ID: 0 WN:131495 100kN

Results:

Nr	Fmax. N	Agt mm	
6	2160,11	4,32	
7	1715,63	4,78	
8	2959,12	5,81	
9	2523,59	6,48	
10	1437,32	11,26	Bonding yielded

Statistics:

Series n = 5	Fmax. N	Agt mm
x	2159,15	6,53

Series graphics:

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10

Conclusions:

Finally, the test results of the 1,2-coefficient design load were examined on the comparison objects and the test objects. It is discovered that all objects had an equivalent performance. Only one different performance occurred with the test object No. 10 which endured the design load, but its bonding unfastened before the load reached the 1,2-coefficient.

The test object No. 10 was ignored in the breaking load test. Its maximum adherence was already achieved in the 1,2-coefficient design load which was recorded in the breaking load results.

The breaking load test results show that there are no major differences between the comparison and the test objects.

In Seinäjoki, Finland on the 21st March 2016

Martti Ala-Louko
The project manager

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