



Data Protection Impact Assessment for Camera Surveillance - Case: City of Turku

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The purpose for this thesis is to find out what are the different steps of the process, what needs to be done before Data Protection Impact Assessment (DPIA) for cities' camera surveillance. What are all the requirements for doing it and what regulations are needed to take into consideration. The topic for this thesis was found during discussion with city of Turku. After internship at City of Turku where my main task was to do inventory from surveillance cameras, it was natural to start writing a thesis relating to surveillance cameras. After a few meetings the Data Protection Impact Assessment for surveillance cameras was suggested, it being a high priority for the city as it is required by law.

Data Protection Impact Assessment is needed for how the cameras can be used and for what purpose. Primary task is to find what information is collected with the surveillance, how it is stored and who is responsible for its correct handling. Thesis includes semi-structured interviews, document review and literature review. The process started with the camera surveillance inventory where data were collected for camera surveillance with survey to find out how many cameras there are, what systems, are they functional and do they have all necessary registration information. If there was some lack of information, such as no knowledge about systems, phone calls were made and if necessary, agreed upon meeting at the location.

The Data Protection Impact Assessment is needed for most parts of city's organization and this thesis' purpose is to help to achieve that. This thesis gives steps on how to conduct the Data Protection Impact Assessment and what other important regulations, such as General Data Protection Regulation (GDPR) need to be taken consideration. General Data Protection Regulation has also changed the requirements for information that needs to be available for everyone whose data has been collected. The name and contact information of the registration keeper needs to be easily found to ask what data has been collected from individuals.

Tomi Rantamo

Kameravalvonnan tietosuojaan vaikutustenarvioinnin tekeminen - Turun kaupunki

Vuosi	2021	Sivumäärä	32
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Tämän opinnäytetyön tarkoituksena on selittää mitä kuuluu prosessiin tietosuojaan vaikutustenarvioinnin tekemiseen kameravalvonnassa. Mitkä ovat vaatimukset sen tekemiselle ja mitkä säädökset vaikuttavat siihen. Opinnäytetyö sisältää puolistrukturoituja haastatteluja, dokumenttikatsauksen, lakikatsauksen ja kirjallisuuskatsauksen. Prosessi alkoi keräämällä dataa, kuinka paljon kaupungilla on kameroita, mikä järjestelmä, onko ne toiminnassa, mikä niiden käyttötarkoitus on ja onko tarvittavat rekisteritiedot olemassa. Tämän jälkeen tuli käytyä kohteissa, joissa oli epäselvyyttä, ketä on vastuussa, toimiiko kaikki kamerat tai ei tiedetä kamerajärjestelmää tai muuta vastaavaa.

Aihe tälle opinnäytetyölle löydettiin keskustelujen aikana Turun kaupungin kanssa. Työharjoittelun jälkeen, jonka pääaiheena oli valvontakamera inventaario, oli luonnollista jatkaa opinnäytetyötä koskien jotenkin valvontakameroita. Muutaman tapaamisen jälkeen tuli puheeksi tietosuoja-arviointi koskien valvontakameroita, sillä se on tärkeä saada kuntoon mahdollisimman nopeasti, koska laki vaatii sen olevan kunnossa.

Tietosuojaan vaikutustenarviointi tarvitsee tehdä suurimmassa osassa kaupungin organisaatiota ja tämän opinnäytetyön tavoite on auttaa ymmärtämään mitkä ovat vaatimukset sen tekemiseen, ja mitä kaikkea siihen kuuluu sisällyttää. Opinnäytetyö myös selittää mitkä ovat tärkeimmät säädökset liittyen sen tekemiseen, kuten Euroopan Unionin Yleinen tietosuoja-asetus (GDPR) säädös koskien tietosuoja. Yleinen tietosuoja-asetus on myös muuttanut vaatimusta saada tietoon kerättyä dataa henkilöistä ja että rekisterinpitäjän pitää olla helposti löydettävissä ja myöskin heidän yhteystietonsa tulee olla saatavilla vaivattomasti ja siten tiedot mitä heistä on kerätty.

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Terminology

GDPR	General Data Protection Regulation
DPIA	Data Protection Impact Assessment
CCTV	Closed-circuit television
HD	High Definition
IT	Information Technology
IoT	Internet of Things
EU	European Union
UI	User Interface
NVR	Network Video Recorder
VMS	Video Management System

1 Introduction

This thesis introduces what needs to be done before Data Protection Impact Assessment process, how to conduct DPIA for camera surveillance, how DPIA is done in City of Turku and what are the most important legislation and regulations regarding DPIA. The methods used in writing this thesis include semi-structured interviews, literature review, legislation review and documental review.

After internship at Turku there was discussion if thesis could be made for the city of Turku. After some meetings there was agreement to write a thesis about process steps for Data Protection Impact Assessment (DPIA) as it is needed to be done as soon as possible. As the DPIA is related to surveillance cameras, it was good idea to start thesis with impact assessment on CCTV systems.

One thing to take into consideration according to City of Turku Project Manager (2021, personal communication) is to find and register what camera systems and how many cameras city has and who is responsible of their maintenance and registration. Aforesaid are crucial to understand as it is required to mention the purpose of the cameras in registration. Used methods to get required information were done with survey, phone calls, visiting locations and marking all details to excel. After all this information is collected, it is easier to understand how many camera systems and cameras there are within the city, how old the systems are, how easy it is to connect them to one network and if any cameras require updating to keep data safe and not accessible to outsiders. While creating the DPIA, it is important to find out the mandatory legislation and recommendations to follow.

City of Turku has multiple different divisions where camera surveillance is used: educational buildings, health care, municipality buildings, offices to name a few. All of these have different types of usages for camera surveillance and registration is required for all of them separately.

1.1 City of Turku

City of Turku is the sixth largest city in Finland with around 193 000 inhabitants. The entire county has over 310 000 residents. The city has two universities and four higher education institutions with over 35 000 students altogether. City of Turku has approximately 13 000 employees. City of Turku is divided by the river Aura as seen from Figure 1.



Figure 1 Map of City of Turku (City of Turku 2021)

1.2 Administration Divisions in Turku

Divisions in Turku are divided into four different divisions, Welfare Division, Education Division, Recreation Division and Urban Environment Division. All the divisions are going to be updated as Turku moves to mayor model. Every division has their own responsibility area at on camera surveillance. The DPIA is needed to be done in every division but there are different necessities for camera surveillance, as the usage is so different. Some locations use it to protect building, to prevent crimes inside. Others has student safety and employee safety aspect so it is not recommended to do only one DPIA for whole city as it may not be equally beneficial for all the divisions.

Administration divisions are still in development as Turku is changing to a model where the mayor is the head of the administration of the city. This might affect the Divisions and responsibilities of the DPIA on camera surveillance.

The Welfare Division of Turku City produces services that increase health and well-being for the residents of Turku. The Health and Social Welfare Committee makes decisions concerning health and social welfare in Turku. The Welfare Division promotes the well-being of the citizens with pre-emptive, examination, treatment, family, and rehabilitation services. (City of Turku 2021) Camera surveillance in welfare division consists hospitals, health care offices. It is used mainly to monitor patients, visitors on health care facilities and monitoring buildings.

Changes at Health Care and Social Welfare will also make it more difficult to know whose responsibility camera surveillance is as it is changing from cities to counties. The development is still ongoing and there might still be some important changes. Until further

details it is difficult to find out who is responsible at Health Care section. (Sote-uudistus 2021)

The Education Division organizes and develops the education services of the city. The division includes early childhood education, basic education, upper secondary school education, vocational education, evening high school, and apprenticeship education in Finnish and Swedish, as well as the Finnish and Swedish adult education centers. (City of Turku 2021) Camera surveillance is used to monitor school, students and for investigating crimes done in school areas. Cameras are for students and employee's safety as well, as it may be used to investigate unclear situation between students or employees. Some schools would like to use cameras to control emergency exit training.

The Recreation Division of Turku City consists of five service areas: library services, museum services, sports services, youth services, and the city orchestra. The production of services is supported by human resources and administrative services, finances, and IT services, as well as communications and marketing. (City of Turku 2021) Camera surveillance is used to monitor public services as mentioned before and for investigating crimes done in these locations.

The Urban Environment Division is responsible for organizing operating conditions needed for the growth of an attractive city, developing urban environment and the structural functionality and attractiveness of the city. The division is also responsible for the built infrastructure of the city, the implementation and maintenance of a high-quality urban environment and the planning and implementation of healthy spaces. (City of Turku 2021) Camera surveillance in Urban Environment Division is mainly located in public transportation, depots, and landfill. This are used to monitor equipment stored on those depots, to investigate possible crimes on area.

2 Principles of DPIA for Camera Surveillance

This chapter of the thesis introduces relevant legislation, literature, and basic usage of the camera surveillance and other related documents. In this thesis development framework includes requirements of the camera surveillance's Data Protection Impact Assessment. It also presents why camera surveillance is used and needed.

2.1 Purpose for camera surveillance

Purpose for camera surveillance is to protect people and properties, prevent crimes and help investigate crimes. In cities that differs on different divisions as usage differs. Some cameras are used to only protect properties but for example welfare Division uses cameras also to

monitor patients and visitors. Camera surveillance has advanced rapidly in a couple of years as HD cameras, 360 rotation dome cameras have been developed and taken into use as a regular camera system all over the world. This has helped cameras to recognize previously mentioned things even more accurately. Camera surveillance always needs jurisdiction for usage and cannot be used to other purposes as mentioned in registration. According to Office of Data Protection Ombudsman (2021), Camera Surveillance can gather sensitive data and that is reason why usage of cameras has been regulated so strictly.

Camera surveillance is regular in today's cities. Good example is London where there are thousands of cameras covering CCTV system. According to CCTV UK (2020) website there are 691 000 cameras and average Londoner is caught in camera approximately 300 times a day. DPIA needs to be clear in big cities as there can be easily conflict with individual rights as there is so significant number of cameras. In reference to Bischoff (2020) countries such China, India and United Kingdom are most surveilled countries. However, only UK city was London that included in top 20 surveilled cities, 18 out of 20 being Chinese cities. Regardless the number of crimes has not decreased in the same index as number of cameras has increased. Nonetheless, surveillance cameras help to investigate crimes that otherwise might not be solved.

2.2 Data Protection

Data protection is important as today's cameras can record voices or most of them has prebuild ability to do so. This might be dangerous in case of someone who should not have an access for records might hack the system and use it for eavesdropping aimed at confidential material. Penfold (2020) addresses that at the time of Internet of Things (IoT) it is easier to get access to networks and equipment such as microwaves etc. that are connected to internet and those can be used to launch online attacks into CCTV systems. The possibility for this is low but impact might be high, so it is wise to not ignore it completely. Penfold (2020) states that IoT also helps cameras to communicate with alarms and other systems and that may be helpful. However, these are not yet fool proof and needs still development. During Finnish cities' security specialists DPIA meeting (2021, personal communication) there was discussion with other cities what platforms every city is using, what purposes they use their cameras for, how they integrate the DPIA for their cameras and why cameras should not be online in public network but instead on protected private network. It was mutual opinion, until it can be assured that it is safe to use public networks.

According to City of Helsinki Data Protection report (2021) Data Protection survey is always required be done always when new process is taken in consideration, getting new systems, or building new system within the city. Survey needs to be done as well when there is major changes or updates on current systems. On survey will be investigated if there is any usage of

personal data and if that is true is there needed to do DPIA regarding to survey of questions of data protection.

For example, of City of Helsinki's survey there is yes, and no questions. Questions includes for instance is there any personal data and what kind of data is gathered. If the answer is yes additional information is required. Example of question on Table 1.

Is there some new technology that is taken to usage for city that has not been used before?

Is there any sensitive or very personal information that is used?

Is the personal information used for valuation and analytics such as profiling and anticipation?

Is personal data transferred to other countries outside of the European Union?

Table 1 Example of questions for DPIA survey (City of Helsinki 2021)

Similar survey could be used at city of Turku's DPIA as there is many similarities on both assessments. It would be wise to use finished document rather to do brand new one. It may be fixed, if necessary, to be more distinctive for Turku but basics are the same.

2.3 Legislation for camera surveillance

According to the Act on the protection of privacy in working life (Finland 2004) states that camera surveillance may be used for safety of employee and other visitors, to protect property and for monitoring production process, to prevent dangerous situations and to investigate them.

Another law related to Camera Surveillance DPIA is Private Security Services Act (Finland 2014) in case that security guard monitors city's surveillance camera as it is quite often. There needs to be specific reasons for security guard to observe cameras and recordings. Reasons for usage could be including protecting property and staff where the security guard is assigned to do their tasks. Another possible scenario could be that security guard needs to do Investigating crimes with police.

According to Act on the protection of privacy in working life (Finland 2019) Camera surveillance can be used to individuals when employee safety is in danger because of his job description or helping preventing danger or harm to their healthiness. When job description is to handle great amounts of money, bonds or valuables camera surveillance can be used to

prevent and investigate crimes. To protect employees' interests and rights, this needs to be employee's own request.

Criminal code of Finland (Finland 2000) states as well that camera systems must be installed so that as they gather data, they do not harm individual's privacy. Camera Surveillance cannot be used to observe individual workers other than mentioned earlier, installed on toilets, or dressing rooms (Finland 2000).

2.4 General Data Protection Regulation

In April 2016, the European Parliament adopted the GDPR, replacing its outdated Data Protection Directive, enacted back in 1995 (European Commission 2021). Unlike a regulation, a directive allows for each of the twenty-eight members of the EU to adopt and customize the law to the needs of its citizens, whereas a regulation requires its full adoption with no leeway by all 28 countries second. In this instance, the GDPR requires all 28 countries of the EU to comply and there are big fines if country will not comply. (Rossow 2021) That makes GDPR one of the strongest regulations that European Union has adopted.

General Data Protection Regulation (GDPR) was issued in May 2018 for European Union (EU) member countries and extended to in July 2018 to European Economic Area (EEA) then fore affecting to many other countries. Because if GDPR registers needs to be more accurate and must have specific purpose for keeping register. GDPR has also changed what information can be gathered and what is intention for gathering data. (European Commission 2021)

1. **Lawfulness, fairness, and transparency – Processing must be lawful, fair, and transparent to the data subject.**
2. **Purpose limitation – You must process data for the legitimate purposes specified explicitly to the data subject when you collected it.**
3. **Data minimization – You should collect and process only as much data as necessary for the purposes specified.**
4. **Accuracy – You must keep personal data accurate and up to date.**
5. **Storage limitation – You may only store personally identifying data for as long as necessary for the specified purpose.**
6. **Integrity and confidentiality – Processing must be done in such a way as to ensure appropriate security, integrity, and confidentiality (e.g., by using encryption).**

7. Accountability – The data controller is responsible for being able to demonstrate GDPR compliance with all these principles.

Table 2 Principles of the GDPR (Woldford 2021)

As Table 2 shows, principles need to be clear and easily find able for the subject that is part of the register. The priority for GDPR is to protect individuals and to standardize data protection and collection in EU countries.

According to Andreasson, Riikonen & Ylipartanen (2017, 31) regulation includes also that data protection needs to be taken consideration and that cities, organizations and companies must show it that they comply with the regulation and data protection is taken seriously. Regulation demands that the process how the data is gathered and stored is represented so persons whose data is gathered may monitor what information about them is stored and used and that there is not any unnecessary data collected.

Table 3 explains how person whose data has been registered has right to get information what data has been collected about them.

When data has been gathered from person themselves (article 13)

When data has been gathered from other sources (article 14)

Right to get access to gathered data (scrutiny, article 15)

Right to demand correction of information (data correction, article 16)

Right to delete data (" right to get forgotten", article 17)

Right to limit usage (article 18)

Right to trust that register keeper will announce of corrections, removals, and limitation of data usage for who personal data has been granted (article 19)

Right to transfer data to other system (article 20)

Right for objection (article 21)

Automated individual decision, also including profiling (article 22)

Right to get acknowledged about security breaches (article 34)

Table 3 Persons' rights regarding data collection (Andreasson et.al. 2017, 34-35)

Data transfer needs to be protected so personal data is safe. This means that data transfer needs to build that way, so it is not easy access for those who has no rightful access to data. (Andreasson & Koivisto 2013, 69).

Intersoft consulting (2021) states that for example, the telephone, credit card or personnel number of a person, account data, number plate, appearance, customer number or address are all personal data. All of this are data where there is something that individual can be recognized and thus are under GDPR. Finally, the law states that the information for a personnel reference must refer to a natural person. In other words, data protection does not apply to information about legal entities such as corporations, foundations, and institutions. For natural persons, on the other hand, protection begins and is extinguished with legal capacity. Basically, a person obtains this capacity with his birth, and loses it upon his death. Data must therefore be assignable to identified or identifiable living persons to be considered personal. (Intersoft consulting 2021)

2.5 Data Protection Impact Assessment

DPIA is a process for building and demonstrating the compliance. European Parliament (2021) states that under the GDPR, non-compliance with DPIA requirements can lead to fines imposed by the competent supervisory authority. Then fore, every country in European Union needs to monitor that they have all required DPIA done. Data Protection Impact Assessment (DPIA) may be required in cases of one of the processing scenarios specified in the General Data Protection Regulation arising. A processing operation having been added to the competent data protection authority's list and national laws. (Tietosuoja 2021)

Lehtonen (2021) states that every piece of information that includes something from what individuals can be recognized is personal information. Processing of personal information can be either manual or automatic. Usage can be collecting, saving, sorting, parsing, retaining, editing, or customization, searching, poll, grant information with transferring, spreading, or making them to accessible other ways, combine data, limit data, removal or deleting data. Also, observing personal data is processing personal data.

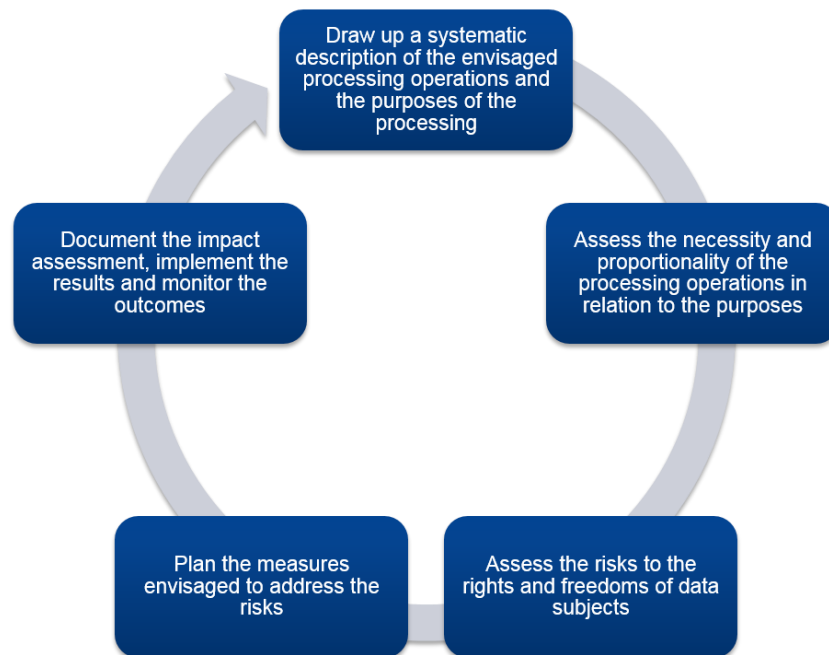


Figure 2 Data Protection Impact Assessment process (Tietosuoja 2021)

According to Office of Data Protection Ombudsman (2021), an impact assessment must be carried out if the envisaged processing of personal data is likely to result in a high risk to people's rights and freedoms. Process is described in Figure 2. An impact assessment is especially important when the operation involves functions from Table 4.

Using new technologies such new IoT platforms

Processing on a large scale of personal data relating to criminal convictions or offences or of special categories of personal data, such as data concerning health or revealing ethnic origin, political opinions, religious beliefs, or sexual orientation

A systematic and extensive evaluation of personal aspects relating to natural persons which is based on automated processing, and on which decisions are based that produce legal effects concerning the natural person or similarly significantly affect the natural person

A systematic monitoring of a publicly accessible area on a large scale. Such public events, concerts

Table 4 When DPIA is needed (Tietosuoja 2021)

2.6 Jurisdiction

City has legal and justified usage to organize and keep camera surveillance. According to report from City of Tampere (2021) Camera surveillance means monitoring with equipment that has continual data transmitting or data recording. Camera surveillance is also possible on public area or in storages, offices where customers or externals has access. City's camera surveillance and usage of records are based on completing statutorily tasks, common good and usage of the government officials. Crucial usage is described more closely on Table 4.

Monitoring and controlling traffic
Forming situational picture from traffic and other situations/events/conditions
Traffic and city planning
Preventing situations that decrease security
Investigating accidents or dangerous situations
Maintaining event security
Investigating threats to public safety
Investigating traffic accidents
Protecting property
Maintaining patient, customer, and student security
Preventing abuse
Investigating abuse or crime

Table 5 Crucial usage of camera surveillance (City of Tampere 2021)

Also, city has right to use records as employer to show jurisdiction to end employment (when employer has knowledge for reason to end employment). Records cannot be used to getting or investigate basis to end the employment. Records may be used also to investigate or vindication of disturbance or harassment in workplace. (City of Tampere 2021)

During Finnish cities' security specialists DPIA meeting (2021, personal communication) it came clear that city needs to have registry of camera surveillance in their web page or other way public to see for any individual any time. There also need to be found guidelines for individuals that are part of the register. In some countries there are all information at camera

signs that who is register keeper and contact information. That is not the case in Finland at least for now.

Other purpose for camera surveillance can be new traffic warden overall cameras. These are quite new and is not fully taken to all the cities as legislation has been unclear why and when cameras can be used. Rahkonen (2020) writes that camera can record on public place and traffic wardens has right to record on their clients parking areas. However, watching recordings always need justification like suspection for some crime. In such cases, there needs to be always occupational representative, supervisor, lawyer, and this action needs to be told for warden that has recorded event. Records may not be watched without specific reason, as there must always be suspicion of crime.

3 Methodology

Development for this thesis started on mid-2021, as Kothari (2004, 96) states that there is primary data that are collected afresh first time, so semi-structured interviews are this thesis' primary data. Secondary data, as Kothari (2004, 96) explains is data that has been already collected.

3.1 Interviews

Kothari (2004, 98) states that interview method is usually done with structured way. Such interviews involve the use of set of predetermined and of highly standardized techniques of recording. Hyvärinen, Nikander & Ruusuvoori (2017) states that interviews can be structured, semi-structured or unstructured interviews. Practically however, none of the interviews can be really without any structure as interviewer should know what the field for the questions is and why interview is done first place. According to Hirsjärvi & Hurme (2001, 91) interviewer should stay neutral at interview situation and to not give their own opinions to distract interview situation. Interviews for this thesis were done with semi-structured interview to few main responsible persons of camera surveillance in city of Turku, questions can be found from Appendix 2. Semi-structured interview was held with the Teams app. Interview was sent to seven people where four did reply and agreed for the interview. Questions were sent to interviewee beforehand, so they had time to look them through prior to actual interview. Virolainen (2006, 60) states that advantage for semi-structured interview comparing to process description is to get more comprehensive and more detailed answers to questions. Interviews took approximately one hour each.

3.2 Literature and legislation review

As there was not found so many academic or scholar sources this thesis used both literature and legislation review to compensate the amount of literature used for thesis. Also, documents helped to get better view of the process as there was information that was highly helpful.

As Data Protection Impact Assessment is highly monitored legal wise it was easy to choose legislation review as part of methods. Different legislation was listed earlier through earlier on this thesis, but most important ones were General Data Protection Regulation, Criminal code of Finland (Finland 2000), Act on the protection of privacy in working life (Finland 2004) and Private Security Services Act (Finland 2014).

3.3 Document review

According to Ojasalo, Moilanen & Ritalahti (2015, 37) a document review supplies a good approach to learn more about the organization's situation which is City of Turku in this case, and issues existing, and by using the researched data, produce development aspects. Document analysis covers publications, webpages, annual reports, and other documents used in the case city (Ojasalo et al. 2015, 43). Document analysis is often connected to other information collection methods (Ojasalo et al. 2015, 43) and like in this thesis many of the City of Turku's internal documents are not public. This thesis included different documents from City of Turku, City of Tampere, and City of Helsinki to name a few. These documents helped to get overview for process to do the DPIA.

4 Results

Camera Surveillance has become common in cities with technological development making it possible. Camera Surveillance is used for many things and this thesis helps to understand its many aspects. The knowledge of the purpose for the camera surveillance is necessary as it varies what legislations affect to camera surveillance, depending is it used to monitor buildings and property or employee and people. Cities are required to get Data Protection Impact Assessment done as part of GDPR.

As the main purpose for the thesis was to find out what are the different steps of the process, what needs to be done before Data Protection Impact Assessment (DPIA) for cities' camera surveillance. Steps before the DPIA process that was found were, camera inventory, inspecting registers and gain sufficient knowledge with personal communication with city's specialists. Also, meetings with other's cities' specialists were helpful to achieve crucial details about the process.

4.1 Camera inventory before the DPIA

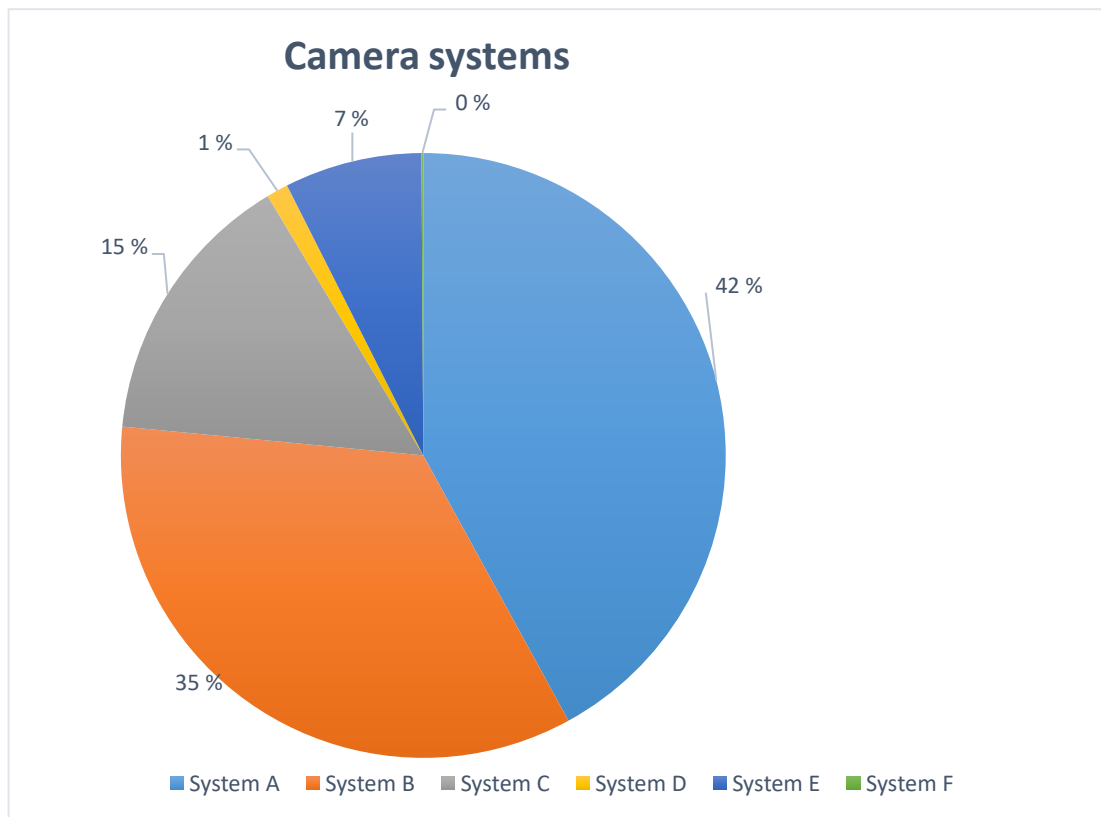


Figure 3 Camera systems in City of Turku

Before the DPIA could be done, it was helpful for city to find what kind of camera systems there is in different locations. There is variation within the systems and some systems are a bit older than others. There for it was essential to make a list how many of systems are up to date or if there are differences at technical aspects. As Figure 3 shows there are two main systems and few other systems. In DPIA many system camera networks make it more difficult to plan and keep register as variation of different suppliers, technicians, and programs. It could be easier to control systems if there are one or two main platforms for all cameras as there is not so many differentials between the equipment.

4.2 Process for creating a DPIA for City level CCTV

First, it is crucial to understand why DPIA is required to be done. Referring to city of Tampere's report (2020) that GDPR (EU 2016/679) states that DPIA needs to be done particularly when personal data processing includes potential high risk for natural person's rights and liberties.

City of Tampere's report (2020) states as well that impacts need, to be evaluated for example when large number of sensitive materials are handled, or the technology is brand new. If straight identifiers, information to recognize individuals wind up to external hands this information could be used to identity thefts, for blackmailing or in frauds. Individual might be caused major economic harm, interfering to fundamental rights and some other major harm to privacy protection.

Camera surveillance can be produced that way it affects to big groups of people, for example public events so picture and records can be analyzed with advanced technology. City is in different development projects where question to camera surveillance is relevant. For reasons above is justified to compose DPIA for camera surveillance in the city. First is needed to arrange workshop with key persons to camera surveillance. After first workshop's conclusion and valuation can be kept second workshop where the documentation can be produced.

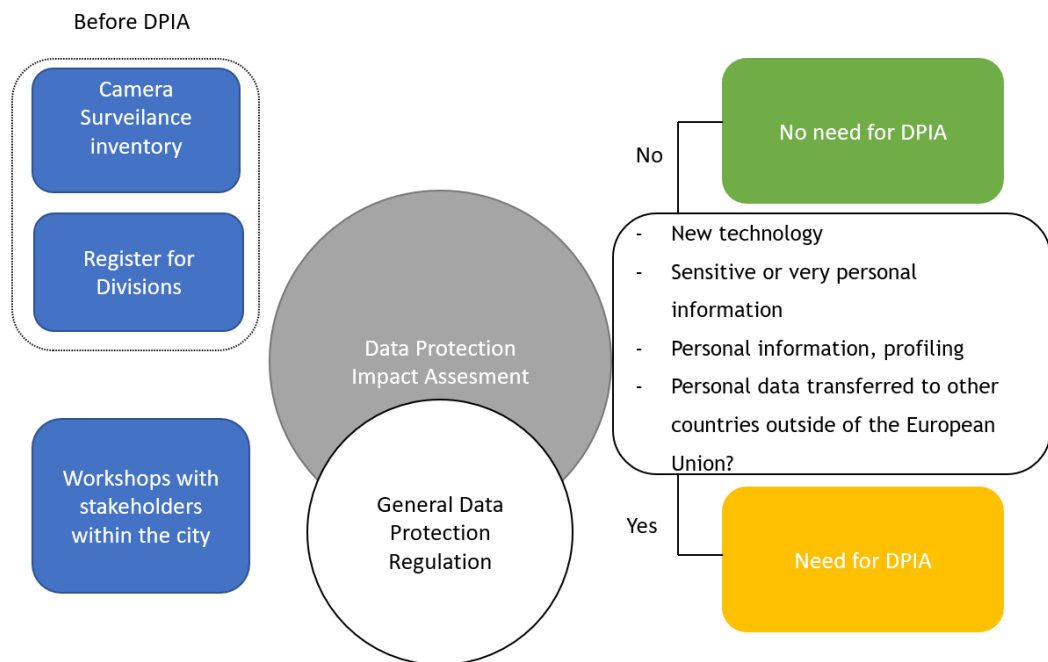


Figure 4 DPIA process within the city

As Figure 4 shows, before DPIA process inventory needs to be done so city knows which locations are under DPIA. How many cameras there are, how many different systems, functionality, what are the purposes for the camera surveillance. It is also recommended to keep workshops so different divisions know what process holds and who are responsible fulfill the DPIA. In Figure 4 there are also mentioned most important questions what needs answer before cities know is DPIA needed or not.

4.3 Camera surveillance in Turku, cooperation with authorities

According to City of Turku Project Manager (2021, personal communication), city has cooperation with police for cameras and the police will do request to use camera surveillance material. However, in certain situations like school shootings police might have need for direct access to cameras quickly and they could clarify the need of usage after situation is over. Police has requested certain locations to be priority on upgrades and city tries to fulfill their requests as it sees best. Every usage is recorded and filed. Rescue Department has also access to cameras' live feed but not to records so the DPIA does not concern them now. However, if they need recording possibility later the DPIA needs to be done for what they are using it for.

Camera surveillance is regularly updated and maintained. Aura river brings challenges as well as there has occurred drownings and property damages as bicycles or scooters has been thrown to the river. As Blomqwist (2013) states that there are approximately 1-3 drownings yearly. Also, cameras help in rescue operations to locate and identify the target. These all actions are under DPIA and that is why it must be done thoroughly. There cannot be any conflicts where camera is used as there might appear problems if usage for cameras is unclear.

4.4 Camera Surveillance platforms

In Finland some cities stay only with one major system. During Finnish cities' security specialists DPIA meeting (2021, personal communication) it came clear that there are pros and cons on that. It is easier to maintain but when contract ends there needs to be clear who owns the systems, so in worst scenario city has no cameras for a while or they need to replace all the systems yet again. Also, the usage of for cameras differs at different divisions in the city so all the usage is needed to be written down to register for what cameras are used. If there are few main systems, it is easier to keep cameras functional in case some of supplier goes to bankrupt or something similar, so they are no further capable of keeping CCTV systems online. However, it is reasonable that there are not too many systems either as then it is more difficult to get spare parts for the systems, maintain or update systems.

According to meetings with the Project Manager (2021, personal communication) and Finnish cities' security specialists DPIA meeting (2021, personal communication) there are different options for cities to choose their camera surveillance platforms. At Figure 5 there are different manufacturers in locations, and they have their own User Interfaces (UI). This is not optimal situation, as there is need to do Data Protection Impact Assessment for all the systems as they differ and the necessity for the usage vary on different locations.

Multi model platform

There is different manufacturer's systems in locations and they have their own User Interface

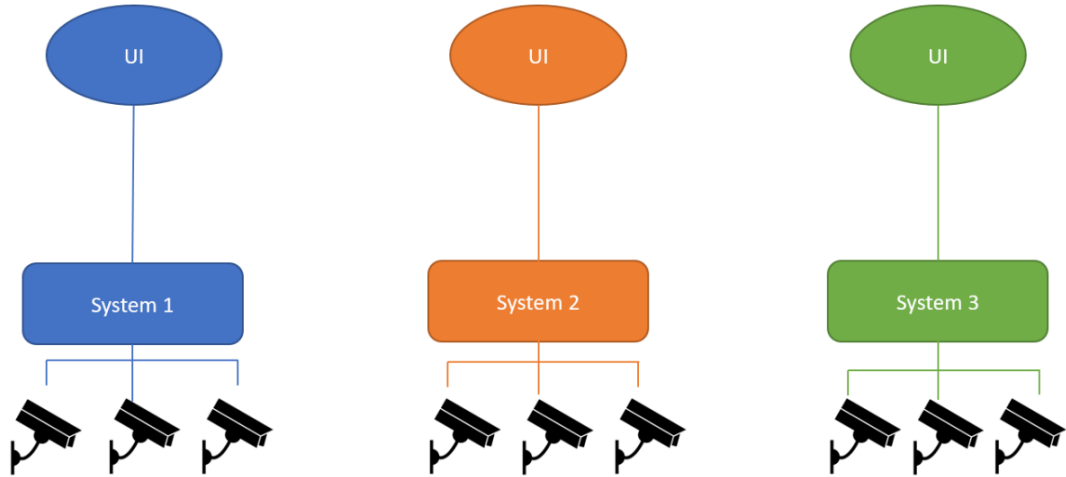


Figure 5 Multi model platform

At Figure 6 there is all systems from the same manufacturer and there is same Video Management System (VMS) and UI. This is otherwise good but at this situation city is too dependent from one supplier. If contract ends, bankruptcy for company occurs or something with major impact consequences happens.

One model platform

There is same manufacturer's cameras that are connected to video management system at all locations and their User Interface

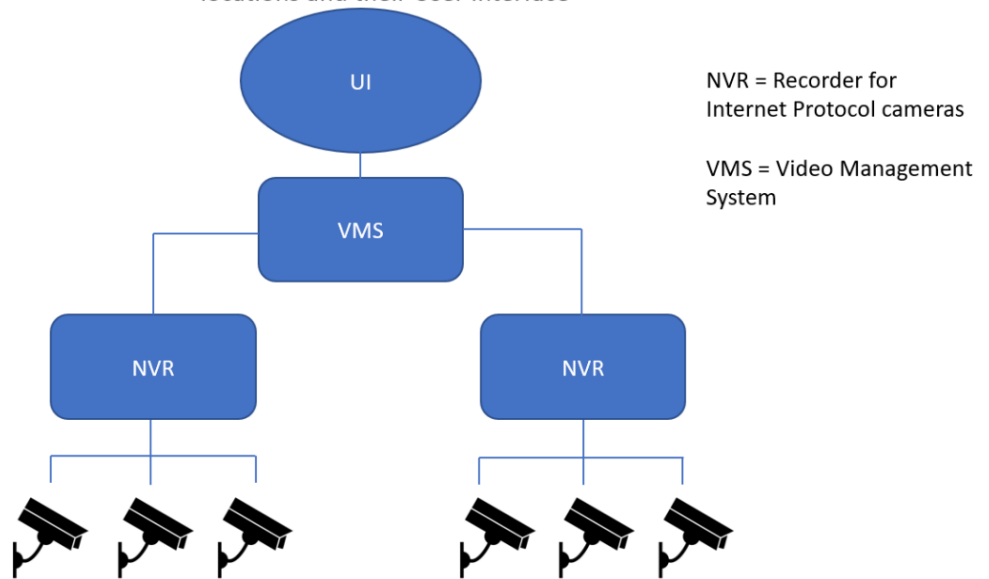


Figure 6 One model platform

Middleware platform Figure 7 is where all different systems are on the same User Interface via software that transfers data to one platform. In this model different manufacturers may be used, and it is safer that city does not rely only to one supplier and maintaining is easier as well. At this model city is not so dependent just from one supplier.

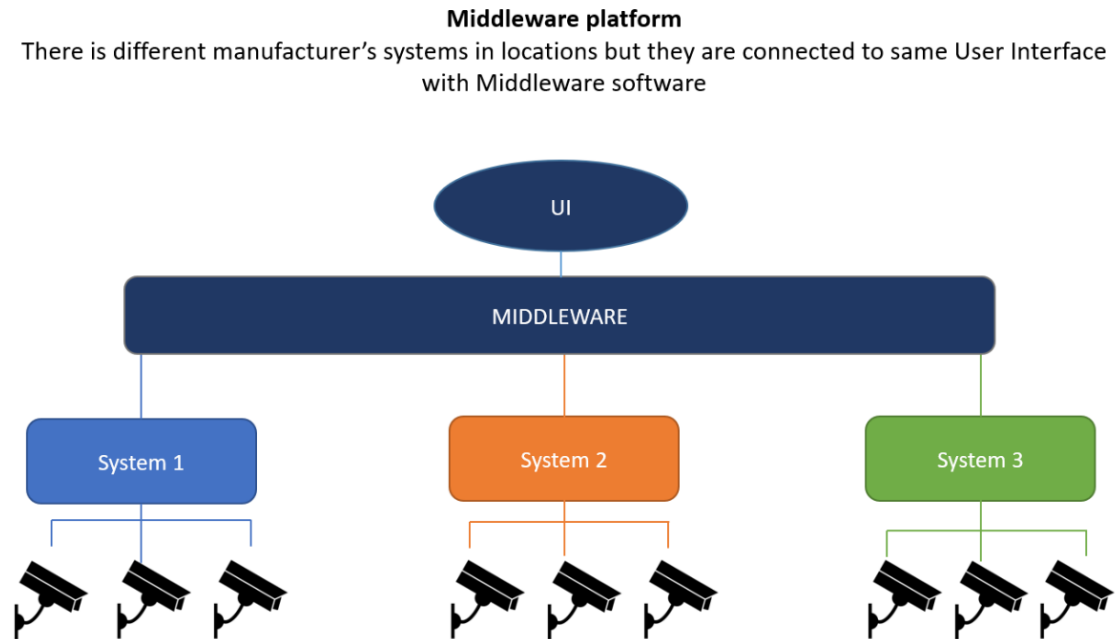


Figure 7 Middleware platform

4.5 Interview results

Regarding to results on interviews the divisions are responsible of that there is register keeper whose task is to keep DPIA updated and easy to find. Biggest challenges are ownership whose responsibility facility or structure is and resources. It is sometimes unclear what division is responsible of certain registers. Another challenge is there enough employees who has knowledge of DPIA and more importantly knows how it is done. According to interviews (2021, personal communication), there is sometimes lack of knowledge of who is the responsible of doing DPIA or who can be asked of questions regarding impact assessment. There has not been many Impact Assessments overall that has been made, so guidelines and tutoring are needed for better results. Also, getting DPIA started and for getting it done more thoroughly other than it is required because of the law. If there is not any motivation to do it might be rushed and benefits are minimal from whole process. It could be used to improve camera surveillance and security but usually it is taken as must done and for that there is not used so much time. Monitoring is needed for personal data risks because those can be done once and then be forgotten. Before DPIA can be done it is good to know is it only one for whole city or

is it divided between divisions. So, who are the register keepers? Why is camera surveillance used? Inventory for cameras helps but is not mandatory for DPIA.

Turku has done cooperation with other cities, such Tampere, Espoo, Oulu and Jyväskylä. There has been found new ideas for every city and has been helpful for all participants. Cities has agreed to continue cooperation further.

Legislation for surveilling personnel, why and when it can be done. When there is lot of handling money, valuables or when it makes working safer for employee and they are strictly followed when it can be used to monitor employees.

5 Conclusions and recommendations for the future

As a conclusion thesis was challenging to do as Data Protection Impact Assessment is still quite new thing and there are not many documents to compare on other cities. There are a few exceptions, like Helsinki that has done DPIA well and can be used as help tool for Turku.

the DPIA is not voluntary but mandatory to do. It may be must to do thing, but it can improve other aspects in camera surveillance as well if It is done properly and not only so it is done as required. City of Turku should continue to do close cooperation with other major cities in Finland as it is beneficial for all the participants. With this collaboration all the cities might find new aspect that they have not thought earlier and to help each other to fulfill the DPIA right way. The DPIA guidelines are in pretty good shape as national level but cities are still developing theirs, yet it is still on the good track and will be improved soon enough. Likewise, cities should remember that there might be big fine from European Union if DPIA is not done and GDPR followed. It does not concern public organizations but for example their suppliers which are private companies.

First step for DPIA is to find what are all the purposes for the camera surveillance and from there it is easier to proceed how to do the Impact Assessment for the whole city. It will take time if it is wanted to do thoroughly and legally. There are many aspects to be taken consideration, but it is needed to be done and with workshops it is easier to all responsible people to understand whole picture what that means to other divisions as well. Easiest way might be to diver divisions so purposes for camera surveillance are clear. For instance, health care and education. Cameras are used for different purposes, so same DPIA for both might not be most effective way to proceed.

The DPIA should be updated and monitored regularly so there are not any surprises when there are changes at equipment or regulations. It is easier to keep up to date when it is monitored on regular basics. Most important thing is to agree who is responsible so there are

not any conflicts on who should keep track of situation with the DPIA and report the state for the City of Turku.

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Appendix 1: Questions for the Interview

1. Who is responsible for that DPIA for camera surveillance has been done by register keepers?
2. What are the biggest challenges for creating the DPIA for camera surveillance?
3. What preparations needs to be done before camera surveillance DPIA can be conducted?
4. What are the most important legislations other than GDPR regarding DPIA?
5. Has Turku done cooperation with other cities such as Helsinki, Espoo, Vantaa, Tampere, and Oulu? Has this been helpful? Were there any new aspects?