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Covid-19 contact tracing apps and the processing of personal data in the Nordic countries: a comparative study of several models

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The Covid-19 pandemic has posed unprecedented challenges for governments and societies around the world. There are growing privacy concerns about the ways governments use data to respond to Covid-19 crisis. Most European countries, including from the Nordic region, have resorted to digital technologies that involve the processing of personal data. Digital technologies such as mobile applications (hereafter ‘app’ or ‘apps’) have been adopted as a means of tracing the spread of the disease and enforcing lockdowns¹. These contact tracing applications on mobile phones, which are based on Bluetooth or geolocation data, allow for tracking contact with Covid-19 infected persons, helping thus authorities monitor and contain the spread of the virus². Contact tracing apps enable to quickly identify and instantly warn users if they have been in close contact with an infected person. However, like many digital applications requiring the processing of personal data, the digital tools developed to fight Covid-19 raise profound fundamental rights concerns such as data protection and privacy. In order to mitigate these risks, the Council of Europe and the European Commission issued guidelines and emphasised that although mobile applications can play a vital role in combating the

¹ K. ECK & S. HATZ, *State surveillance and the COVID-19 crisis*, Journal of Human Rights 2020, 19:5, 603-612, DOI: 10.1080/14754835.2020.1816163.

² OECD, *Tracking and tracing COVID: Protecting privacy and data while using apps and biometrics*, 23 April 2020. Accessed 05 mars 2022. https://read.oecd-ilibrary.org/view/?ref=129_129655-7db0lu7dto&title=Tracking-and-Tracing-COVID-Protecting-privacy-and-data-while-using.

Covid-19, they must fully comply with the personal data protection and privacy requirements as set out in EU law. The EU's General Data Protection Regulation (GDPR) regulates how personal data may be processed in the EU/EEA³.

- 2 This paper focuses on the Nordic countries' digital responses to Covid-19 and their processing of personal data. In this paper, I explore and compare particularly contact tracing applications and the issues that arose regarding the processing of personal data. The aim of this paper is to study the Danish, Finnish, Swedish and Norwegian models. The reason for choosing these Nordic countries is that they are ranked as the most digitalized countries in Europe⁴. Given the similarity of the Nordic societies, it is interesting to examine how they have responded to the fight against Covid-19. For instance, Sweden's model of soft response to Covid-19 has been very different from its Nordic neighbours and the rest of Europe. In this paper, I will answer the following questions: What digital responses to Covid-19, particularly contact tracing apps were adopted? And how was the processing of personal data dealt with? What issues related to data protection were raised? Did they comply with personal data protection and privacy requirements?
- 3 The paper will proceed as follows: the first section presents a background on Covid-19 contact tracing app and the legal framework related to the processing of personal data; the second section contains an overview of the digital responses of each country with a focus on contact tracing apps and the processing of personal data; the third section presents the comparative analysis; and the last section deals with the discussion and conclusion.

1. BACKGROUND ON COVID-19 CONTACT TRACING APP, PERSONAL DATA PROTECTION AND PRIVACY

- 4 This section presents a background on Covid-19 contact tracing apps and the legal framework related to the processing of personal data and privacy.

1.1. Background on contact tracing apps

- 5 To begin with, contact tracing has been defined by the World Health Organisation (WHO) as the process of identifying, assessing and managing people who have been exposed to a disease to prevent onward transmission. Contact tracing aims to notify individuals that they have been in close contact/proximity to someone who is eventually confirmed to be a carrier of the virus, in order to

³ Regulation (EU) 2016/679 of the European Parliament and the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

⁴ European Commission. *Digital Economy and Society Index (DESI)*, (23 November 2021.) Accessed 08 mars 2022. <https://www.nordicom.gu.se/en/latest/news/denmark-finland-and-sweden-are-eus-most-digital-countries>. Denmark, Finland, Sweden are the top three most-digital EU countries, Norway is also monitored by the DESI indicators and would have been placed fifth.

break the contamination chains as early as possible⁵. Close contact or proximity to individuals affected seems to be the main means of transmission of the virus. By identifying and notifying the persons at risk, public health authorities can slow down the further spread of the virus by asking them to self-isolate, if possible, and rapidly test and isolate them if they develop symptoms⁶.

- 6 Contact tracing is normally conducted manually by public health authorities, which is a time-consuming process. It requires manual interviews of all individuals in contact and it cannot identify individuals not known to the infected person but have come in close contact for example in public areas such as a shopping centre, restaurant or public transport. The use of digital technology such as mobile apps can make this process faster and more efficient. Digital technologies in contact tracing apps offer the possibility to quickly identify and instantly alert citizens/users if they have been in close contact with an infected person who has been confirmed positive for Covid-19, thus curbing the spread of the virus⁷.
- 7 Contact tracing apps mainly use two technologies to collect data: Bluetooth and geolocation through Global Positioning System (GPS). GPS uses satellites to track location data, i.e. the location of every user, and therefore collects information on people's movements, which raises privacy concerns. As for the Bluetooth technology, it can detect proximity/contacts between individuals. Therefore, since proximity data is considered sufficient, the European Data Protection Board (EDPB) has recommended the use of proximity tracing apps that do not require access to location data. Contact tracing apps that rely on proximity data such as Bluetooth are considered compliant with data protection law⁸.
- 8 Contact tracing apps can use a central or decentral approach to data storing and sharing. In a centralised system, information uploaded to the app is kept on a remote server while in the decentralised system, all information is kept on the user's phone, which also notifies other devices in the event of infection without the intervention of a central server⁹. More specifically, in the centralised model, data is shared with a central server managed by the authority which carries out data processing and storage while in a decentralised model, most data is stored locally on an individual's phone and as little data as possible is shared with the health authorities¹⁰. Contact tracing apps that adopt a centralised model use location data (GPS) while contact tracing apps with a decentralised model use

⁵ EDPB (2020). Guidelines 04/2020 on the use of location data and contact tracing tools in the EU's fight against Covid-19- Common EU Toolbox for Member States p. 3.

https://edpb.europa.eu/sites/default/files/files/file1/edpb_guidelines_20200420_contact_tracing_covid_with_annex_en.pdf

⁶ eHealth Network (2020), Mobile applications to support contact tracing in the EU's fight against COVID-19: Common EU Toolbox for Member States, 15 April 2020, https://health.ec.europa.eu/system/files/2020-04/covid-19_apps_en_0.pdf.

⁷ eHealth Network (2020), p. 6.

⁸ EDPB (2020).

⁹ V. L. RAPOSO (2022), 'I'm right behind you': Digital contact tracing under European law. *Maastricht Journal of European and Comparative Law*, 0(0). <https://doi.org/10.1177/1023263X221116227>.

¹⁰ V. L. RAPOSO (2022).

Bluetooth Low Energy technology¹¹. In the centralised model, the end user may be identifiable while in the decentralised model, the user may be anonymous. A model that complies with EU law requirements is a voluntary app based on the decentralised system, operating via Bluetooth and providing solely proximity data¹². Google and Apple have developed together contact tracing apps that use Bluetooth technology¹³ with a decentralized model¹⁴. The Google/Apple Exposure Notification (GAEN) system was designed to send notification to users while respecting their privacy.

- 9 Contact tracing apps can be effective depending on the percentage of the population that downloads and uses the app. The success of a contact tracing app depends largely on mass acceptance¹⁵. In order to work, contact tracing apps need to access and process individuals' data, which raises, among the population, concerns about privacy and data protection as well as the potential risk for misuse of data and government surveillance. This can lead to a lack of trust in government and can have a negative effect on people's intention to install a contact-tracing app on their phones¹⁶. As the European Commission points out, an important prerequisite for the development and acceptance of such apps by individuals is trust. People must have the certainty that compliance with fundamental rights is ensured and that the apps will be used only for the specifically defined purposes, that they will not be used for mass surveillance, and that individuals will remain in control of their data¹⁷. Contact tracing apps with high privacy design plays an important role in increasing acceptance of the app¹⁸. Thus, this digital technology to trace contact, if deployed correctly, could contribute substantially to minimising its spread. However, if deployed without appropriate safeguards, it could have a significant negative effect on privacy and individual rights and freedoms¹⁹.

1.2. The EU and Council of Europe legal framework for data protection and privacy

- 10 The right to privacy and personal data protection are protected by legal instruments of the European Union (EU) and the Council of Europe. In the EU, the GDPR regulates all processing of personal data. The term personal data is defined in Article 4(1) of the GDPR as any information which is related to an identifiable living natural person and can cover information, such as *a name, an*

¹¹ V. L. RAPOSO (2022).

¹² V. L. RAPOSO, (2022).

¹³ eHealth Network (2020), p. 9.

¹⁴ European Commission (2020). Mobile applications to support contact tracing in the EU's fight against COVID-19, Report of June 2020. https://health.ec.europa.eu/system/files/2020-07/mobileapps_202006progressreport_en_0.pdf.

¹⁵ S. TRANG *et al.* (2020) One app to trace them all? Examining app specifications for mass acceptance of contact-tracing apps, *European Journal of Information Systems*, 29:4, 415-428, DOI: 10.1080/0960085X.2020.1784046.

¹⁶ S. TRANG *et al.* 2020.

¹⁷ European Commission (2020). Communication from the Commission: Guidance on Apps supporting the fight against COVID 19 pandemic in relation to data protection (2020/C 124 I/01) [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020XC0417\(08\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020XC0417(08)&from=EN).

¹⁸ S. TRANG *et al.* 2020.

¹⁹ eHealth Network (2020), p. 6.

identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. According to Article 4(2) of the GDPR 'processing' means any operation performed on personal data such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction.

- 11 In the EU, the protection of personal data is a fundamental human right enshrined in Article 16 of the Treaty on the Functioning of the European Union (TFEU) and in Article 8 of the EU Charter of Fundamental Rights (Charter). The right to data protection, related to the right to privacy, is enshrined in Article 7 of the Charter.
- 12 In the Council of Europe, the protection of personal data is considered as a human right that derives from the right to private life enshrined in Article 8 of the European Convention on Human Rights (ECHR). The relevant EU legal frameworks for the protection of personal data include the Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, also called the General Data protection Regulation (GDPR) and Directive 2002/58/EC (the "ePrivacy Directive")²⁰. The GDPR provides comprehensive rules for the processing of personal data. In the Council of Europe, the European basic data protection regulation is the Council of Europe Convention 108 of 28 January 1981 for the Protection of Individuals with regard to Automatic Processing of Personal Data ('Convention 108') which is the first international legally binding instrument adopted in the field of data protection.
- 13 It is important to note that GDPR, the EU regulation on data protection, also covers European Economic Area (EEA) countries such as Norway. The GDPR contains principles and rules for processing of personal data, sets forth certain rights of individuals and safeguards the right to the protection of personal data.
- 14 Article 5 of the GDPR outlines the principles that must be followed when processing personal data. The principle of lawfulness, fairness and transparency requires data processing to be performed based on one of the legal grounds specified in Article 6 of the GDPR, among others, if the processing is necessary for the performance of a task carried out in the public interest. The principle of purpose limitation requires that data are used for a specific and clear purpose. The principle of data minimisation requires that only personal data that is adequate, relevant and limited to what is necessary in relation to the purpose may be processed. The principle of accuracy is related to the reliability of the data. According to the principle of storage limitation, data should be stored for a limited time. The principle of integrity and confidentiality requires the security of personal data. According to the principle of accountability, a data controller should be responsible for complying with the GDPR.
- 15 The rights to privacy and data protection may be restricted. However, any interference with the right to privacy and personal data protection need to be grounded in law, and must be necessary and

²⁰ Another Data Protection Directive for Police and Criminal Justice.

proportionate, as the GDPR and ultimately the EU Charter (Article 8) require. Any derogations or restrictions must comply with the Charter, respect the essence of the rights and freedoms at stake and be necessary and proportionate²¹. Article 23 of the GDPR provides the possibility for legislative measures to restrict data subjects' rights, including where required for public health reasons²². The ECHR allows derogation in time of emergency as set out in Article 15 of the Convention, and in Article 7 of the EU Charter on respect for private and family life. However any restrictions of human rights must be legal, proportionate and necessary, and be of limited duration. Article 15 of the ePrivacy Directive exceptionally allows authorities to access and process traffic and location data from telecommunication providers in cases of threats against public or national security or for preventing, prosecuting, investigating and punishing serious crimes. Such processing is allowed for the protection of the rights and interests of others.

1.3. Recommendations and guidelines on processing of personal data and contact tracing apps

- 16 The European Commission and the European Data Protection Board (EDPB) adopted guidelines and recommendations on how to uphold data protection standards in the development and use of tracing apps²³. At the Council of Europe level, two joint statements by the Chair of the Consultative Committee and the Data Protection Commissioner recalled the principles to be upheld to help fight the pandemic while respecting individuals right to privacy and data protection and warned against unwanted effects²⁴. They all point out that digital contact tracing should be in line with the GDPR and the Convention 108, which share almost the same main principles. Contact tracing apps should thus comply with all the GDPR Article 5 principles, such as lawfulness, fairness, and transparency, purpose limitation, data minimisation, accuracy and storage limitation, integrity and confidentiality, and accountability.
- 17 According to the European Commission recommendations²⁵, all principles under Article 5 GDPR must be observed in the design and implementation of contact tracing apps. Any data collection and processing to address the pandemic must be limited in time and linked to the purpose of the health

²¹ https://fra.europa.eu/sites/default/files/fra_uploads/fra-2020-coronavirus-pandemic-eu-bulletin-may_en.pdf.

²² https://fra.europa.eu/sites/default/files/fra_uploads/fra-2021-fundamental-rights-report-2021-focus_en.pdf.

²³ European Commission (2020). Communication from the Commission: Guidance on Apps supporting the fight against COVID 19 pandemic in relation to data protection (2020/C 124 I/01) [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020XC0417\(08\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020XC0417(08)&from=EN).

European Union Agency for Fundamental Rights (FRA). Fundamental Rights Report 2021 - The coronavirus pandemic and fundamental rights: A year in review. https://fra.europa.eu/sites/default/files/fra_uploads/fra-2021-fundamental-rights-report-2021-focus_en.pdf.

²⁴ Joint Statement on the right to data protection in the context of the COVID-19 pandemic (30-03- 2020) <https://rm.coe.int/covid19-joint-statement/16809e09f4>.

²⁵ European Commission (2020). Communication from the Commission: Guidance on Apps supporting the fight against COVID 19 pandemic in relation to data protection (2020/C 124 I/01) [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020XC0417\(08\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020XC0417(08)&from=EN).

crisis. Only minimal, accurate and secure data should be collected. The European Commission advises against the use of data gathered for other purposes than the fight against Covid-19 and recommends that data be kept only for a maximum of one month, and be deleted as soon as they are no longer necessary for the purpose of alerting individuals²⁶. Location data is not considered necessary for the purpose of contact tracing and it is not advised to use location data in this context²⁷. The use of location data based on mobile phone networks is unlikely to be accurate enough and technologies such as Bluetooth are more reliable as it allows a more precise assessment of the contact. Therefore, the use of GPS tracking should be prohibited in the EU while resorting to Bluetooth technology is recommended. Data should be processed in a transparent way and appropriate technological methods. This implies, for instance, using Bluetooth proximity data, decentralised methods and open source codes. Finally they emphasised that such digital tools should be voluntary and that proper legislation had to be adopted to this end. Finally, to ensure full data protection, national health authorities should act as data controllers and data protection authorities should be fully involved and consulted in the development of the contact tracing apps and they should review their deployment²⁸.

- ¹⁸ The European Union Agency for Fundamental Rights published its opinion and stressed also that EU Member States should ensure that Article 8 of the EU Charter, as well as the principles of fairness, data minimisation, and purpose limitation, which Article 5 of the GDPR highlights are applied²⁹.

2. OVERVIEW OF COVID-19 CONTACT TRACING APPS AND THE PROCESSING OF PERSONAL DATA IN THE NORDIC COUNTRIES

- ¹⁹ This section provides an overview of the digital responses of Nordic countries with a focus on contact tracing apps and the processing of personal data in Denmark, Finland, Norway and Sweden.

2.1. Denmark

The first case of Covid-19 in Denmark was detected on 27 February 2020³⁰. On 11 March 2020, the Danish government initiated an emergency response and declared a national lockdown.³¹ On 12 March 2020, the Danish Parliament passed legislation amending the Epidemic Act (*epidemiloven*)

²⁶ European Commission (2020). C 124 I/8.

²⁷ European Commission (2020). C 124 I/4.

²⁸ European Commission (2020). C 124 I/9.

²⁹ European Union Agency for Fundamental Rights (FRA). Fundamental Rights Report 2021. https://fra.europa.eu/sites/default/files/fra_uploads/fra-2021-fundamental-rights-report-2021_en.pdf.

³⁰ OECD/European Observatory on Health Systems and Policies (2021), *Denmark: Country Health Profile 2021, State of Health in the EU*, OECD Publishing 2021, Paris, p. 17. Accessed 08 mars 2022. <https://doi.org/10.1787/2dce8636-en>.

³¹ Denmark, Press conference, *speech by the Prime Minister on 11 March 2020*, at. Accessed 08 mars 2022. http://stm.dk/p_14916.html.

giving the Danish Minister of Health considerable powers in order to provide for a swift response to Covid-19³².

- 20 On 18 June 2020, Denmark launched a national contact-tracing app called *Smittestop* (Danish for “infection stop”) as one of the digital solutions of the government’s strategy to ensure a controlled and responsible reopening of society³³. In April 2020, Denmark started to develop a contact tracing app. There was broad political support for the app with a political agreement reached on 15 May 2020 on principles, purpose and technological solution for the Danish infection detection app³⁴. A partnership with the IT provider private company, Netcompany, was then approved by the Danish Parliament³⁵. The Danish contact tracing app was thus developed as a public-private innovation initiative, involving the Ministry of Health, the Danish Patient Safety Authority, the Danish Health Authority, the Agency for Digitization, the Statens Serum Institut and the private company, Netcompany³⁶.
- 21 Privacy and data security were high priorities for the Danish Government when designing the contact tracing app. To ensure a better security and privacy protection of the app, the Ministry of Health created an Advisory Board that included five experts in the field, including from the Data Ethics Council and the Cyber Security Council, to contribute with its knowledge, advice and assessments concerning the protection of privacy and technological choices³⁷. Following the recommendations of experts, the app used a decentralised contact registration, where data on users’ contacts was stored exclusively on the phone³⁸. The app was based on the decentralised Google/Apple Exposure Notification (GAEN) system and used Bluetooth to exchange temporary exposure keys between devices. The Danish *Smittestop* has undergone a comprehensive security test before launch, and the app used technology from Apple and Google, which has been developed with a special focus on privacy³⁹. The app provided service in a secure manner and complied with data protection rules,

³² FRA *Coronavirus COVID-19 outbreak in the EU: Fundamental Rights Implications-Denmark*, 20 March 2020. p.2. Accessed 10 mars 2022. https://fra.europa.eu/sites/default/files/fra_uploads/denmark-report-covid-19-april-2020_en.pdf.

³³ FRA *Coronavirus COVID-19 outbreak in the EU: Fundamental Rights Implications-Denmark*, 20 March 2020. p. 2.

³⁴ Digitaliseringsstyrelsen. Nu er appen smitte|stop klar til danskerne. *Digitaliseringsstyrelsen*. 18 June 2020. Accessed 15 mars 2022. <https://digst.dk/nyheder/nyhedsarkiv/2020/juni/nu-er-appen-smitte-stop-klar-til-danskerne/>.

³⁵ D. ORNSTON, 2020, p. 253.

³⁶ Ministry of Health. *Politisk aftale om frivillig smittesporingsapp for COVID-19*. Press release in Danish of May 15 2020 from the Ministry of Health, “Political agreement on voluntary contact tracing app for COVID-19”, 2020. Accessed 15 mars 2022. <https://sum.dk/nyheder/2020/maj/politisk-aftale-om-frivillig-smittesporingsapp-for-covid-19->

³⁷ Nyt Advisory Board skal rådgive myndighederne om den kommende danske smittestops-app. Accessed 15 mars 2022. <https://sum.dk/nyheder/2020/maj/nyt-advisory-board-skal-raadgive-myndighederne-om-den-kommende-danske-smittestops-app->

³⁸ Ministry of Health, *Press release in Danish of May 15th 2020*.

³⁹ Denmark, *News from the Danish Ministry of Health*, (‘Nu er appen smittestop klar til danskerne’), available in Danish. Accessed 16 mars 2022. <https://sum.dk/nyheder/2020/juni/nu-er-appen-smitte-stop-klar-til-danskerne-> and FRA p. 12-13. <https://digst.dk/nyheder/nyhedsarkiv/2020/juni/nu-er-appen-smitte-stop-klar-til-danskerne/>.

voluntary practices and best practices for privacy by design. The technology did not allow central storage of data, nor that data was shared externally. Data was only used on an aggregated and pseudonymised level⁴⁰.

- 22 The purpose of the *Smittestop* was to contribute to breaking chains of infection by alerting persons who have been in close contact with users with a confirmed Covid-19 infection and who were therefore at risk of being infected. Specifically, if a person chose to download the app on their mobile phone, the app registered which phones the user was in close contact with; and if the person was tested positive for Covid-19 and wanted to share that information in the app, they logged into the app using their NemID, a common log-in for Danish digital banks. The other app users who had been in close contact with, for more than 15 minutes at a distance of one metre, and less than two weeks before the diagnosis, would receive a notification that they might have been exposed to Covid-19. The other app users then get notified of the risk of infection, but not the name of the person infected and not the place or date when they had been in close contact⁴¹. Data on whom a person has been in contact with is only saved on that person's phone, and no authorities have access to the information⁴².
- 23 It was voluntary to download and use the contact tracing app *Smittestop*. Users could withdraw their consent at any time by uninstalling the app and all the stored information would be deleted from their phone⁴³. The *Smittestop* app was downloaded 245,000 times on its first day, half a million times within ten days, and 1.4 million times by September 2020⁴⁴.
- 24 The legal basis for the Danish *Smittestop* app was the Executive Order on the processing of information on electronically registered contacts in connection with prevention and containment of infection with Covid-19 ('the Executive Order') of 17 June 2020 valid until 31 October 2020⁴⁵. The Act has been issued in accordance with Section 21 b of the Danish Epidemic Act⁴⁶. In addition, a legal basis for processing the data was provided in Article 6(1)(e), i.e. the processing was necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested

⁴⁰ OECD-OPSI, *Danish COVID-19 infection tracing app (Smitte|stop)*. Accessed 16 mars 2022. <https://oecd-opsi.org/covid-response/danish-covid-19-infection-tracing-app-smittestop/>.

⁴¹ Digitaliseringsstyrelsen, *Nu er appen smitte|stop klar til danskerne*, 18-06-2020. Accessed 16 mars 2022. <https://digst.dk/nyheder/nyhedsarkiv/2020/juni/nu-er-appen-smitte-stop-klar-til-danskerne/>.

⁴² Denmark, *News from the Danish Ministry of Health, ('Nu er appen smittestop klar til danskerne')*. Accessed 16 mars 2022. <https://sum.dk/nyheder/2020/juni/nu-er-appen-smitte-stop-klar-til-danskerne-and> <https://digst.dk/nyheder/nyhedsarkiv/2020/juni/nu-er-appen-smitte-stop-klar-til-danskerne/>.

⁴³ Denmark *Smittestop*. Accessed 16 mars 2022. <https://smittestop.dk/en>.

⁴⁴ *Smittestop: Denmark launches English version of Covid-19 contact tracing app*. The Local, December 18, 2020. Accessed 18 mars 2022. <https://www.thelocal.com/20201218/smittestop-denmark-launches-english-version-of-covid-19-contact-tracing-app/>.

⁴⁵ Bekendtgørelse om behandling af oplysninger om elektronisk registrerede kontakter med henblik på at forebygge og inddæmme udbredelsen af Coronavirussygdom 2019 (COVID-19). Accessed 18 mars 2022. <https://www.retsinformation.dk/eli/ltra/2020/896>.

⁴⁶ Lov om foranstaltninger mod smitsomme og andre overførbare sygdomme. Accessed 18 mars 2022. <https://www.retsinformation.dk/eli/ltra/2020/1444>.

in the controller, and Article 9(2)(i) and (g) of the GDPR for the processing of sensitive personal data necessary for reasons of public interest in the area of public health; as well as Section 7(4) of the Danish Data Protection Act (*Databeskyttelsesloven*). The legal basis for storing and accessing the personal data stored on the phone was based on consent, in accordance with Section 3(1) and (2) of the Executive Order on Cookies⁴⁷. This consent only covered access to and storage of data on the phone. The Executive Order regulated, inter alia, the use of the app, the purpose, the processing and deletion of personal data. Personal data could not be processed for purposes other than to support infection tracing and for current evaluation of the effect of the digital solution. Personal data collected was deleted after 14 days⁴⁸. The Danish Patient Safety Authority was the data controller for the app, as it was responsible for contact tracing.

- 25 The Danish Data Protection Agency (*Datatilsynet*), which is the Danish Supervisory Authority, has issued recommendations during the development stage of the *Smittestop* app which were valuable to protect the processing of personal data by the app. The Danish Data Protection Agency has expressed concerns that any upcoming app for tracking Covid-19 was potentially intrusive to privacy, even though that current circumstance was exceptional, and voluntariness and transparency was crucial when developing the app⁴⁹. Before the release of *Smittestop*, the Danish Institute for Human Rights⁵⁰ and IDA, the Danish tech association⁵¹, also raised strong concerns about the intrusiveness of the tracking of individuals with location data⁵², and have submitted their recommendations for the protection of personal data.
- 26 However, contrary to other Nordic contact tracing apps, the Danish government decided not to make the *Smittestop* app's source code publicly available, arguing that it would increase the risk of security breaches⁵³. The Free Software Foundation Europe found that this did not comply with the WHO's

⁴⁷ Denmark Smittestop. Accessed 18 mars 2022. <https://smittestop.dk/en>.

⁴⁸ Behandling af personoplysninger. *SmitteStop*. Accessed 18 mars 2022. <https://smittestop.dk/databeskyttelse/>.

⁴⁹ Datatilsynet, *Datatilsynet om app: Frivillighed og gennemsigtighed er afgørende*, 17-04-2020. Accessed 20 mars 2022. <https://www.datatilsynet.dk/presse-og-nyheder/nyhedsarkiv/2020/apr/datatilsynet-om-app-frivillighed-og-gennemsigtighed-er-afgoerende>.

⁵⁰ European Union, *Coronavirus pandemic in the EU - Fundamental Rights Implications - Bulletin 2*, European Union Fundamental Rights Agency, 28 May 2020, p. 55. Accessed 25 mars 2022. <https://fra.europa.eu/en/publication/2020/covid19-rights-impact-may-1>.

⁵¹ Denmark, *IDA's standing on digital surveillance instruments during covid-19 (IDAs holdning til digitale overvågningsredskaber under covid-19)*, available in Danish, accessed 25 mars 2022. <https://ida.dk/media/6468/idasanbefalinger-til-corona-app.pdf>.

⁵² European Union, *Coronavirus pandemic in the EU - Fundamental Rights Implications - Bulletin 2*, European Union Fundamental Rights Agency, 28 May 2020, p 14. Accessed 25 mars 2022. <https://rm.coe.int/prems-120820-gbr-2051-digital-solutions-to-fight-covid-19-text-a4-web/16809fe49c>.

⁵³ Council of Europe. Digital solutions to fight Covid19. Data 2020 Protection report. *Council of Europe*. October 2020. Accessed 25 mars 2022. <https://rm.coe.int/prems-120820-gbr-2051-digital-solutions-to-fight-covid-19-text-a4-web/16809fe49c>.

and the EU Commission's transparency requirements.⁵⁴ Releasing the source code of the app under a Free Software licence would empower the public and the scientific community to inspect, verify, improve and experiment with it⁵⁵.

2.2. Finland

- 27 The first case of Covid-19 in Finland was confirmed on 29 January 2020. The Finnish government together with the President of the Republic declared, on 16 March 2020, a state of emergency and a partial lockdown was introduced as a result of the Covid-19 outbreak⁵⁶. On 18 March 2020, the Finnish government introduced an emergency law. Most of the decisions and recommendations were implemented according to the Emergency Powers Act, the Communicable Diseases Act and other legislation⁵⁷.
- 28 On 31 August 2020, a Covid-19 contact tracing mobile app called *Koronavilkku* (Corona Blinker in Finnish) was launched by the Finnish Institute for Health and Welfare (THL)⁵⁸. The digital tool was considered as part of the Finnish Government's 'hybrid strategy', the track-test-isolate-treat model⁵⁹. The purpose of the app and the processing of personal data processed by it, was to identify the close contacts of app users and to alert close contacts of potential exposure to the covid-19. Based on Bluetooth technology, the app would not reveal identity to other users but it would help trace unknown contacts that have remained long enough nearby a person who later tests positive for Covid-19⁶⁰. In order to respect privacy, a user who gets a positive Covid-19 test result could choose whether or not they send an exposure alert to their earlier contacts and those who receive the alert would not know who the alert is coming from or where and when the exposure took place. Users who received an alert for exposure will not be revealed to authorities but should rather contact healthcare officials in order to get tested for Covid-19. The mobile app stored personal data such as the pseudonymous codes of users who came into close contact with, as well as data relating to the length, time and Bluetooth signal strength of contacts. Personal data was retained for a maximum of 21 days and was not transferred to parties outside of THL without the user's consent. App users themselves decided to

⁵⁴ Council of Europe, October 2020.

⁵⁵ FSFE, *Denmark keeps source code of Coronavirus tracing app secret*, 29 June 2020. Accessed 25 mars 2022. <https://fsfe.org/news/2020/news-20200629-01.en.html>.

⁵⁶ Finnish Government, *Government, in cooperation with the President of the Republic, declares a state of emergency in Finland over coronavirus outbreak*, Press Release 100/2020 of 16.03.2020. Accessed 30 mars 2022. <https://valtioneuvosto.fi/en/-/10616/hallitus-totesi-suomen-olevan-poikkeusoloissa-koronavirustilanteen-vuoksi>.

⁵⁷ Finnish Government, Press Release 100/2020 of 16.03.2020.

⁵⁸ T. KOTKAS et al., *Finland: Legal Response to Covid-19*, in J. KING and O. L. M. FERRAZ et al (eds), *The Oxford Compendium of National Legal Responses to Covid-19* (OUP 2021). doi: 10.1093/law-occ19/e32.013.32. Accessed 30 mars 2022.

⁵⁹ T. KOTKAS, et al. A (OUP 2021).

⁶⁰ Reuters, *Finland launches its own coronavirus tracing app*, 31 August 2020. Accessed 31 mars 2022. <https://www.reuters.com/article/us-health-coronavirus-finland-app-idUSKBN25R1N0>.

report exposure information to the health authorities. THL decided the means and purposes for the processing of personal data, in other words THL was the data controller.

- 29 The use of the app was voluntary and free of charge. By 5 November 2020, the *Koronavilkku* app has been downloaded 2.5 million times, almost 42% of Finland's population, making it one of the most downloaded contact tracing apps in the world relative to population size⁶¹.
- 30 The legal basis of the Finnish *Koronavilkku* app was temporary amendments (Chapter 4a) to the Communicable Diseases Act⁶² which entered into force on 31 August 2020 and was in place until 31 December 2021. These amendments set up rules of the use and transfer of data. The legal basis for the processing of personal data was related to the performance of a task carried out in the public interest under Article 6(1)(e) of the GDPR and Section 4(2) of the Data Protection Act (1050/2018). In addition, the processing of sensitive personal data which was necessary for reasons of public interest in the area of public health was thus based on the special provision under Article 9(2) of GDPR and Section 6 of the Data Protection Act.
- 31 As conditions for approving the Bill in a process of drafting ordinary legislation, the Constitutional Law Committee of Parliament (*perustuslakivaliokunta/grundlagsutskottet*) required changes to be made regarding the protection of personal information⁶³. The Committee found that restrictions on the protection of privacy must be assessed in the light of the conditions for the restriction of fundamental rights and GDPR, paying attention to the threats and risks posed by data processing. The provisions must be clearer so that ordering a person into quarantine could not solely be based on the information provided by the mobile app, and that the authorities could not use the information for any other purposes than tracing contacts. The processing of sensitive data must be limited to what was strictly necessary by precise provisions. Next, the provisions on the giving and cancellation of the user's consent were also to be clarified⁶⁴. Later, a further amendment to the temporary Chapter 4a of the Communicable Diseases Act was made to allow the compatibility of the *Koronavilkku* mobile app with other countries' corresponding apps in cross-border situations⁶⁵. Contrary to the Danish app, the source code of the app was based on open access.

⁶¹ Institute for Internet and the Just Society, *COVID-19 Technology in the EU: A Bittersweet Victory For Human Rights?*. Accessed 31 mars 2022.

⁶² Act (582/2020) on Temporary Amendments to the Communicable Diseases Act. Accessed 31 mars 2022. <https://www.finlex.fi/fi/laki/alkup/2020/20200582>.

⁶³ Finland, *Constitutional Law Committee statement, Perustuslakivaliokunnan lausunto PeVL 20/2020 vp - HE 101/2020 vp*. Accessed 31 mars 2022.

⁶⁴ Constitutional Law Committee of the Parliament, *Committee Statement PeVL 20/2020 vp* (17 June 2020). ; T Kotkas et al. 'Finland: Legal Response to Covid-19' (OUP 2021).

⁶⁵ T. KOTKAS et al., (OUP 2021).

2.3. Norway

- 32 The first case of Covid-19 in Norway was identified on 26 February 2020. The Prime Minister announced a national lockdown on 12 March 2020⁶⁶. The Emergency Powers Act gave the Norwegian government a wide range of powers to change laws without consulting the parliament.
- 33 On 16 April 2020, the Norwegian Institute of Public Health (FHI) launched the first Norwegian contact tracing app *Smittestopp* (Norwegian for *Infection Stop*)⁶⁷. *Smittestopp* was launched after only a few weeks of development by the Research Institute Simula, in cooperation with the FHI.
- 34 The legal basis for the Norwegian contact tracing app *Smittestopp* was an emergency regulation on digital infection detection and epidemic control in connection with an outbreak of Covid-19⁶⁸ of 27 March 2020, which was based on the 1994 Act Relating to the Control of Communicable Disease⁶⁹. (*Smittevernloven*)⁷⁰. The regulation included measures regarding purpose, function, and restrictions. The *Smittestopp* tracking system registered personal data such as mobile phone number, age and movements/location data, proximity to/contact with infected individuals. Personal data from the app might be linked with a range of governmental databases⁷¹. Users of *Smittestopp* received an SMS if they had been close to other *Smittestopp* users, who had been diagnosed positive⁷². Using GPS and Bluetooth, *Smittestopp* collected data locally and had centralised, non-anonymous storage and management to produce anonymised statistics. All personal data was stored for 30 days. FHI was responsible for the processing of personal data.

⁶⁶ Regjeringen, *Omfattende tiltak for å bekjempe koronaviruset*, Pressemelding 12.03.2020. Accessed 05 April 2022. <https://www.regjeringen.no/no/dokumentarkiv/regjeringen-solberg/aktuelt-regjeringen-solberg/smk/pressemeldinger/2020/nye-tiltak/id2693327/>.

⁶⁷ The Local. *Norway launches 'smittestopp' app to track coronavirus cases*, 16 April 2020. Accessed 05 April 2022. <https://www.thelocal.no/20200416/norway-launches-smittestop-app-to-track-coronavirus-cases/>. FHI. *Smittestopp - ny app fra Folkehelseinstituttet* (arkivert), 16. 04.2020. Accessed 05 April 2022. <https://www.fhi.no/historisk-arkiv/covid-19/nyheter-2020/apr/ny-app-fra-folkehelseinstituttet/>.

⁶⁸ FOR, *Forskrift om digital smittesporing og epidemikontroll i anledning utbrudd av Covid-19*, Dato, FOR-2020-03-27-475. Accessed 07 April 2022. <https://lovdata.no/dokument/LTI/forskrift/2020-03-27-475>.

⁶⁹ LOV, *Lov om vern mot smittsomme sykdommer [smittevernloven]*, LOV-1994-08-05-55. Accessed 07 April 2022. <https://lovdata.no/dokument/NL/lov/1994-08-05-55>.

⁷⁰ I. NGUYEN DUY, *The case of the Norwegian "Infection Stop" application in E-conference on Data protection Issues and Covid-19: Comparative Perspectives*, Blog Droit Européen, 20 July 2020. Accessed 08 April 2022.

⁷¹ K. B. SANDVIK, *"Smittestopp": If you want your freedom back, download now*, May 2020, Big Data & Society 7(2), DOI:10.1177/2053951720939985. Accessed 08 April 2022.

⁷² FHI. *Smittestopp - ny app fra Folkehelseinstituttet* (arkivert), 16.04.2020. Accessed 10 April 2022. <https://www.fhi.no/historisk-arkiv/covid-19/nyheter-2020/apr/ny-app-fra-folkehelseinstituttet/>.

- 35 The use of the app was free and voluntary. The day after the app was launched, on 17 April 2020, nearly one million people have downloaded the infection app⁷³. Within the first week, 1,427,000 people downloaded the app⁷⁴.
- 36 However, the *Smittestopp* app which was developed over a month, has attracted many critics on security and privacy given its rapid development⁷⁵. On April 27, 2020, the Norwegian Data Protection Authority (*Datatilsynet*) started an investigation into the use of the *Smittestopp* app regarding the central registration and the collection of users' location data. Following a notification of a temporary ban on the processing of personal data in connection with the *Smittestopp* contact tracing mobile application, the National Institute of Public Health, on 15 June 2020, decided to stop collecting data from the app and delete all data from the *Smittestopp* app as well as all personal data stored in the central database⁷⁶. On 6 July 2020, the National Data Protection Authority sent its formal decision on a temporary ban on the processing of personal data based on Section 58 of the GDPR⁷⁷.
- 37 The Norwegian Data Protection Authority has found among others that *Smittestopp* could not be considered a proportionate intervention in the user's fundamental right to data protection. The purposes of *Smittestopp* were contact tracing and notification of Covid-19, as well as analysis of anonymous and aggregated data to evaluate the effect of infection control measures, and monitoring of the spread of infection in society. The app had collected large amounts of personal data about the people using it, including continuous registration of movements and information about the users' contact with others. The necessity of using location data from GPS in contact tracing was not established, which is in conflict with the principle of data minimisation. The data collection has not been limited to what is necessary to achieve the purposes of the data processing. Furthermore, *Smittestopp* users could not choose to provide personal data for contact tracing purposes without also agreeing to the data being used for analysis and research while these were different purposes. Therefore, the Norwegian Data Protection Authority found a breach of the principle of data minimisation, the right of access and the principle of transparency, pursuant to Articles 5(1)(a), 5(1)(c) and 15 of the GDPR and concluded that *Smittestopp* was a highly invasive digital solution in terms of data protection⁷⁸. Amnesty International has also issued the same criticisms claiming that the

⁷³ NRK, *Nesten en million har lastet ned smitteapp* (in Norwegian), 17 April 2020. Accessed 10 April 2022. <https://www.nrk.no/norge/nesten-en-million-har-lastet-ned-smitteapp-1.14985000>.

⁷⁴ D. NIKEL, *Norway: 1.4 Million People Download Coronavirus Tracking App Despite Security Concerns*, Forbes 2020. Accessed 10 April 2022. <https://www.forbes.com/sites/davidnikel/2020/04/25/norway-14-million-people-download-coronavirus-tracking-app-despite-security-concerns/?sh=6a357c587832>.

⁷⁵ D. NIKEL, (2020). Accessed 10 April 2022.

⁷⁶ FHI, *FHI stopper all innsamling av data i Smittestopp*, 15.06.2020. Accessed 13 April 2022. <https://www.fhi.no/historisk-arkiv/covid-19/nyheter-2020/jun/fhi-stopper-all-innsamling-av-data-i-smittestopp/>.

⁷⁷ European Data Protection Board, *Temporary suspension of the Norwegian Covid-19 contact tracing app*, 22 June 2020. Accessed 13 April 2022. https://edpb.europa.eu/news/national-news/2020/temporary-suspension-norwegian-covid-19-contact-tracing-app_en.

⁷⁸ European Data Protection Board, 22 June 2020. Accessed 13 April 2022.

Norwegian *Smittestopp* was among the most dangerous apps in the world for privacy, together with apps in Kuwait and Bahrain because of the invasive centralised approach, posing a great threat to privacy, and the location data captured through GPS and uploaded to a central database, tracking the movements of users in real-time⁷⁹.

- 38 Taking into consideration all the criticisms, the Norwegian Institute of Public Health decided to build a new version of the *Smittestopp* app with the Danish IT company Netcompany, which developed the Danish *Smittestop* app⁸⁰. On 21 December 2020, a Bluetooth-based contact tracing app *Smittestopp* was launched by the Norwegian Institute of Public Health⁸¹. The new app was built based on the Apple-Google technology which better addresses privacy concerns. A great emphasis has been put on data protection by design pursuant to Article 25 GDPR, which requires controllers to implement appropriate technical and organisational measures designed to protect personal data during the processing.
- 39 The new *Smittestopp* app did not use GPS data, did not upload personal information to a central server and would only be used for infection tracking, not analysis or research⁸². The personal data processed included digital keys such as Rolling Temporary Exposure Keys and any self-reported information on symptoms of Covid-19. Personal data were not disclosed to others. The use of *Smittestopp* was completely voluntary. Users could stop using *Smittestopp* at any time. The legal basis for processing personal data for the second *Smittestopp* was consent in accordance with Articles 6 and 9 of GDPR. Similar to the Danish app, users who became infected with Covid-19 who chose to notify others through *Smittestopp*, would be asked to give their specific consent to that. All information stored on the phone was continuously deleted after 14 days⁸³.

2.4. Sweden

- 40 On 31 January 2020, the first cases of Covid-19 were registered in Sweden. Unlike its neighbouring Nordic countries, Sweden has adopted a rather unique strategy and did not opt for a lockdown. The Swedish model of handling the pandemic has received much attention internationally.

⁷⁹ Amnesty International, *Bahrain, Kuwait and Norway contact tracing apps among most dangerous for privacy*, 16 June 2020. Accessed 14 April 2022.

<https://www.amnesty.org/en/latest/news/2020/06/bahrain-kuwait-norway-contact-tracing-apps-danger-for-privacy/>.

⁸⁰ Norway Today. *Norway is launching a new infection control app on Monday*, 20 December 2020. Accessed 15 April 2022. <https://norwaytoday.info/news/norway-is-launching-a-new-infection-control-app-on-monday/>.

⁸¹ Smittstop. Simula. December 2020. Accessed 16 April 2022. <https://www.simula.no/smittestopp>.

⁸² R.-I. CAPAR. *Norway is launching a new infection control app monday*. *Norway Today*. 20 December 2020. Accessed 20 April 2022.

<https://norwaytoday.info/news/norway-is-launching-a-new-infection-control-app-on-monday/>.

⁸³ Privacy policy - Processing of personal data. *NIPH Norwegian Institute of Public Health*. Accessed 20 April 2022. <https://www.fhi.no/en/about/smittestopp/use-of-smittestopp-privacy-policy/>.

- 41 Sweden took a soft and hard approach relying extensively on voluntary cooperation and individual responsibility and some restrictive measures. The Swedish constitution does not provide for the proclamation of a state of emergency. All emergency measures taken are rooted in the Communicable Diseases Act (*Smittskyddslag [2004:168]*)⁸⁴. On 1 February 2020, the application of the provisions of the law on infectious diseases was extended to Covid-19⁸⁵.
- 42 Between March and the beginning of April 2020, the Public Health Agency of Sweden (*Folkhälsomyndighet*) (PHA) issued general guidelines, recommendations, advice and citizen's responsibility. The Covid-19 strategy was managed by the Public Health Agency of Sweden. The Government and the PHA urged the nation to follow their recommendations, advice and guidelines and to act responsibly to protect others and themselves. Official Advice or general recommendations (*allmänna råd*) as "Official advice regarding the Communicable Diseases Act" as well as other mandatory requirements formulated by the Communicable Diseases Act, that "Everyone in Sweden has a responsibility to prevent the spread of Covid-19" were issued⁸⁶. Although government agencies in Sweden benefit from a high level of public trust⁸⁷, it is rather civic duty and responsibility than trust that have been at the heart of the strategy to fight the Covid-19 pandemic⁸⁸. The concept of civic duty and responsibility were highlighted not only in the soft measures but also in the hard law. As a matter of fact, in Sweden, hard law measures, accompanying soft law measures were taken from the outset⁸⁹. The Communicable Disease Act is based on voluntarism and individual responsibility⁹⁰. Chapter 2 section 1 of the Communicable Disease Act provides "The obligation of individuals to prevent contagion" and states that "everyone must, by being careful and taking reasonable precautionary measures, participate in preventing the spread of contagious diseases".
- 43 On 16 April 2020, the Swedish parliament adopted amendments to the Communicable Diseases Act, which will remain in force until the end of June 2020. The changes give the government the right to introduce certain legal regulations without prior parliamentary approval, if the changes are considered necessary to combat Covid-19⁹¹. The amendments to the Communicable Diseases Act (*Smittskyddslag [2004:168]*)⁹² were meant to enable the Swedish Government to take drastic measures such as closing

⁸⁴ Riksdagen. *Smittskyddslag (2004:168)*. 08 December 2020, 15 Février 2021.

⁸⁵ P. JONASON and E. CARTIER, *L'articulation entre Soft Law et Hard Law dans la gestion juridique de la Covid-19 en France et en Suède: deux stratégies asymétriques révélatrices d'une "citoyenneté administrative" propre*. ERPL/REDP, vol. 34, no 1, spring/printemps 2022, p. 99.

⁸⁶ Id., p. 111.

⁸⁷ P. JONASON, *Covid-19 pandemic and data protection issues in Sweden*, in E-conference on Data protection Issues and Covid-19: Comparative Perspectives, Blog Droit Européen, 20 July 2020. Accessed 21 April 2022. <https://blogdroiteuropeen.com/2020/07/20/covid-19-pandemic-and-data-protection-issues-in-sweden-by-patricia-jonason/>.

⁸⁸ P. JONASON and E. Cartier, op. cit., p. 99.

⁸⁹ Id., p. 99.

⁹⁰ Id., p. 99.

⁹¹ https://fra.europa.eu/sites/default/files/fra_uploads/fra-2020-coronavirus-pandemic-eu-bulletin-may_en.pdf.

⁹² Riksdagen. *Smittskyddslag (2004:168)*. 08 December 2020, 15 Février 2021.

bars, restaurants, airports, ports and shopping malls and to decide on the distribution of medical assets⁹³. However, these amendments were not used during the crisis. Other laws were reviewed and adopted among others, the Public Order Act (1993:1617) and the Act (2020:148) on Temporary Closure of Activities within the Field of Education During Extraordinary Events in Peacetime⁹⁴. In januari 2021, the Riksdag adopted the Covid-19 pandemic law, which is a law on special restrictions to limit the spread of the Covid-19⁹⁵. This temporary pandemic law allows the government to restrict or prohibit access to bathing places, the closing of shopping centres, the prohibition of gatherings beyond a certain number of people etc.⁹⁶.

- 44 Unlike its neighbouring Nordic countries, Sweden has not developed a national contact tracing app. The Public Health Agency of Sweden has not proposed any digital contact tracing system and has decided that it was not relevant to use mobile phones to track contact between people to track the virus⁹⁷. An uncertainty concerning the legal framework as well as privacy arguments, alongside an unwillingness to divert resources were among the reasons that have led the Swedish health authorities not to develop a digital contact tracing app based on mobile phone data to track the spread of the Covid-19⁹⁸.
- 45 In the spring 2020, the Swedish Civil Contingencies Agency (MSB) took the initiative to develop a digital tool, *Corona app* with the aim of allowing people to report cases of illness in order to provide a clearer picture of the pandemic in Sweden. It consisted of a questionnaire that would be used to map the spread of Covid-19. The MSB would be the data controller, the Swedish State, the data owner; the participation would have been voluntary; the data protection and cybersecurity aspects would have been taken into account throughout the design process⁹⁹. However, the project was cancelled as the Swedish Public Health Agency considered that, like any other digital tool, the MSB app could cause concerns related to privacy. In June 2020, the Swedish Government established a national commission called the Corona Commission to assess how Sweden has handled the pandemic. According to the Corona Commission, the risk that the tool could cause concern could in no way be an acceptable reason to suspend the project¹⁰⁰.

⁹³ P. JONASON and T. LARUE. The Covid-19 pandemic and the Swedish Parliament, how to make use of a flexible constitutional framework, Robert Schuman Foundation, 2020. p. 5.

⁹⁴ *Lag (2020:148) om tillfällig stängning av verksamheter på skolområdet vid extraordinära händelser i fredstid.*

⁹⁵ *Lag (2021:4) om särskilda begränsningar för att förhindra spridning av sjukdomen covid-19.*

⁹⁶ P. JONASON and E. CARTIER, op. cit., p. 109.

⁹⁷ Sveriges Radio. Tegnell säger nej till smittspårning via mobilen. P4 Stockholm. 3 May 2020. Accessed 20 April 2022. <https://sverigesradio.se/artikel/7464370>.

⁹⁸ P. JONASON, Blog Droit Européen, 20 July 2020.

⁹⁹ P. JONASON, Blog Droit Européen, 20 July 2020.

¹⁰⁰ Coronakommissionen, SOU 2021:89.

- 46 Although no contact tracing app was developed, the Public Health Agency of Sweden conducted other types of surveillance of Covid-19¹⁰¹. One of the most important is an electronic system for communicable diseases surveillance called SmiNet, which is used by physicians and laboratories to report cases of Covid-19 in accordance with the Communicable Diseases Act (2004:168)¹⁰². Developed by the Swedish Public Health Agency, SmiNet is an internet-based tool necessary for tracing patients infected with Covid-19¹⁰³. Each record is linked to a patient. Covid-related personal data and personal identification number is registered. The system has strong safeguards for data security and privacy, such as restricted access and strict confidentiality rules¹⁰⁴. In addition, the Public Health Agency of Sweden has introduced a Health Declaration Form, which is a questionnaire on health information that has to be downloaded from the 1177 Swedish healthcare guide¹⁰⁵, filled in and submitted by individuals as a prerequisite to free Covid-19 vaccination. However, no information is available on the processing of those personal data related to health and personal identification numbers that are registered.
- 47 Nevertheless, some Swedish universities also took the initiative to develop some Covid-19 apps. Researchers from the Swedish Royal Institute of Technology developed a web app called *Covidmap.se* made for self-reporting and visualisation of Covid-19 status¹⁰⁶. Furthermore, researchers at Lund University and Uppsala University launched a free symptom tracking app *COVID Symptom study*, to help map the spread of infection in Sweden and increase knowledge of the coronavirus¹⁰⁷. The COVID-19 Symptom Tracker was an app-based daily self-reporting tool. The app was therefore not tracking people but Covid-19 symptoms. Users were asked to enter their symptoms on a daily basis. The information was completely anonymous. The app did not collect data such as names, personal identification numbers, addresses or telephone numbers. Participants supplied an email address when they first created a user account, but e-mail addresses were not included in the research database. The

¹⁰¹ Folkhälsomyndigheten. *Surveillance of communicable diseases*. Accessed 21 April 2022.

<https://www.folkhalsomyndigheten.se/the-public-health-agency-of-sweden/communicable-disease-control/surveillance-of-communicable-diseases/>.

¹⁰² P. JONASON, Blog Droit Européen, 20 July 2020.

¹⁰³ Folkhälsomyndigheten. *Välkommen till SmiNet, an elektronisk anmälan av smittsamma sjukdomar*. Accessed 23 April 2022. <https://www.folkhalsomyndigheten.se/sminet/>.

¹⁰⁴ P. JONASON, Blog Droit Européen, 20 July 2020.

¹⁰⁵ 1177 Vårdguiden. *Covid-19 vaccine in Sörmland*. Accessed 27 April 2022. <https://www.1177.se/Sormland/sjukdomar-besvar/lungor-och-luftvarar/inflammation-och-infektion-ilungor-och-luftror/om-covid-19-coronavirus/om-vaccin-mot-covid-19/covid-19-vaccine-in-sormland-information-in-other-languages/>.

¹⁰⁶ P. JONASON, Blog Droit Européen, 20 July 2020; KTH, Hello Hossein Shokri Ghadikolaei, Postdoc at the Division of Network and Systems Engineering, 11 May 2020. Accessed 28 April 2022. <https://intra.kth.se/en/eecs/aktuellt-pa-eecs/nyheter/hej-hossein-shokri-ghadikolaei-postdoktor-pa-avdelningen-for-natverk-och-systemteknik-1.983485>.

¹⁰⁷ Lund University, COVID Symptom Tracker app launched in Sweden, 28 April 2020. <https://www.lunduniversity.lu.se/article/covid-symptom-tracker-app-launched-sweden>. Uppsala Universitet, COVID Symptom Study Sverige. Accessed 28 April 2022. <https://www.uu.se/forskning/projekt/crush-covid/covid-symptom-study-sverige>.

app user's location was based only on the first two digits of the postal code in order to protect the user's identity. No GPS data was collected, and the app did not in any way attempt to trace the user's movements. According to the app website, all information was handled in accordance with the GDPR and would only be used for research and not for commercial purposes. The use of the app and participation was voluntary¹⁰⁸. By November 2020, almost 200,000 people had participated in the study¹⁰⁹. The app was first called the *COVID Symptom Tracker* but changed name to *COVID Symptom study* as the app was not tracking persons via Bluetooth technology or GPS and thus, could lead to confusion. The *COVID Symptom Study* app was developed by doctors and researchers at King's College London and a health science company, ZOE Global Ltd. According to its website, the ZOE Global Ltd. collects data from users in the UK, USA and Sweden¹¹⁰.

- 48 However, the *COVID Symptom Study* app has been criticised by several organisations, among them the Civil Rights Defenders¹¹¹, the Pirate Party (*Piratpartiet*) and the Association for Digital Freedoms and Rights (*Föreningen för Digitala Fri- och Rättigheter, DFR*). Concerns included among others that it was unclear how the information gathered by the app would be used, the fact that a British company and not a university collected and retained the information, the fact that sensitive personal about health was collected, and that the app could be a breach of privacy, even if it is for a good cause¹¹².
- 49 In December 2020, the Swedish Corona Commission published its first report and made several critical observations concerning contact tracing apps. Sweden has used no contact tracing app or similar digital tool for infection tracking, something that has been common in other countries. The approach chosen by Sweden was based on voluntary measures and personal responsibility, rather than more intrusive interventions while Nordic neighbours and many other countries introduced rigorous measures, such as various forms of lockdown and bans on entry, more or less immediately. The Commission also concluded that Sweden's handling of the pandemic has been marked by a slowness of response. The initial disease prevention and control measures were insufficient to stop or even substantially limit the spread of the virus in the country. According to the Commission, although the focus on recommendations which people are expected to follow voluntarily has been fundamentally correct, in February/March 2020 Sweden should have opted for more rigorous and intrusive disease prevention and control measures¹¹³, including considering contact tracing apps.

¹⁰⁸ Lund University, 28 April 2020.

¹⁰⁹ Covid-19 Contact Tracing Apps in the EU. *Liberties EU*. 02 June 2021. Accessed 28 April 2022. <https://www.liberties.eu/en/stories/trackerhub1-mainpage/43437>.

¹¹⁰ Lund University, *Covid Symptom Study, Data Integrity (Dataintegritet)*. Accessed 29 April 2022. <https://www.lunduniversity.lu.se/article/covid-symptom-tracker-app-launched-sweden>.

¹¹¹ SVT, *Hård kritik mot corona-appen: "Vet inte var uppgifterna hamnar"*, 5 May 2020. Accessed 29 April 2022. <https://www.svt.se/nyheter/lokalt/skane/kritik-mot-integritetsskyddet-i-nya-corona-appen>.

¹¹² SVT, *Hård kritik mot corona-appen: "Vet inte var uppgifterna hamnar"*, 5 May 2020.

¹¹³ SOU 2022:10 Summary p. 3.

3. COMPARATIVE ANALYSIS

- 50 The Covid-19 outbreak has forced many governments to implement different emergency measures to deal with the pandemic. The Nordic countries such as Denmark, Finland, Norway and Sweden reacted promptly, although differently, to the pandemic. Finland decided to activate their 'state of emergency' framework while the rest used already existing legislation and amended it when necessary. Sweden was the only Nordic country to predominantly rely on recommendations, instead of legally binding acts, although later in mid-April 2020 the existing Communicable Diseases Act (2004:168) was modified¹¹⁴.
- 51 Most of the Nordic countries have resorted to digital technologies such as contact tracing apps to handle the pandemic. Our study has shown that all Nordic countries studied, except Sweden, have introduced contact tracing apps to handle the pandemic. Denmark introduced the *Smittestop*, Finland the *Koronavilkku* and Norway the *Smittestopp*. Although the Swedish government has not proposed any contact tracing app due to privacy concerns, there were some initiatives for non-contact tracing apps. Compared to its neighbouring Nordic countries, Norway was the first to launch a contact tracing app while Denmark was the last to develop a contact tracing app because of concerns about cost-sharing and privacy¹¹⁵.
- 52 While contact-tracing apps may play an important role in the fight against the pandemic, they must respect privacy and data protection requirements and principles of EU law such as Articles 7 and 8 of the EU Charter of Fundamental Rights and the principles relevant to the protection of personal data set out in the GDPR and the e-Privacy Directive as well as the principles in Convention 108. As a matter of fact, contact tracing systems introduced by European countries should comply with all the GDPR Article 5 principles, such as lawfulness, fairness, and transparency, purpose limitation, data minimisation, accuracy and storage limitation, integrity and confidentiality, and accountability.
- 53 According to Article 8 of the ECHR, the processing of personal data is lawful provided that it is based on a legal act issued on the basis of such a law and is necessary in a democratic society for meeting such a legitimate purpose. The concept of 'in accordance with the law' in Article 8 of the ECHR, requires that a measure has some basis in domestic law. The lawful principle also imposed by Article 5(1)(a) GDPR, requires the existence of a legal basis. Denmark, Finland and Norway have all enacted legislation for the launch of their contact-tracing apps. The legal basis for Denmark's *Smittestop* app is the Executive Order on the processing of information on electronically registered contacts in connection with prevention and containment of infection with Covid-19 of 17 June 2020. The legal basis for Finland's *Koronavilkku* app is a temporary amendment to the Communicable Diseases Act

¹¹⁴ European parliament (EPRS), States of emergency in response to the coronavirus crisis: Situation in certain Member States III, June 2020, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/651972/EPRS_BRI\(2020\)651972_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/651972/EPRS_BRI(2020)651972_EN.pdf).

¹¹⁵ Darius Ornston, *Denmark's response to Covid-19, A participatory approach to policy innovation in Coronavirus Politics: The Comparative Politics and Policy of COVID-19*. Eds. Scott L. Greer, Elizabeth J. King, Andre Peralta, and Elize Massard da Fonseca 2020. p.253. Accessed 10 mars 2022. https://books.google.se/books?hl=fr&lr=&id=jnZWEAAAQBAJ&oi=fnd&pg=PA249&dq=smittestop+denmark&ots=u8nSU_K2oK&sig=1XdIrGVeakLrCovE6MV-6QMa8kA&redir_esc=y#v=onepage&q=smittestop%20denmark&f=false.

of 31 August 2020. The legal basis for Norway's first version of Smittestop was the Regulation on digital infection detection and epidemic control in connection with an outbreak of Covid-19 of 27 March 2020. However, Norway did not adopt a second legislation for its second version of Smittestop.

- 54 The legal basis for the processing of personal data for all three contact-tracing apps was related to the performance of a task carried out in the public interest under Article 6(1)(e) of the GDPR and Article 9(2) of GDPR necessary for reasons of public interest in the area of public health. The legal basis for processing personal data for the second *Smittestopp* was consent in accordance with Articles 6 and 9 of GDPR. Denmark, Finland and Norway have all passed legislation in accordance with the requirements of the GDPR. Consent is a very important principle. All Nordic countries that have adopted contact tracing apps have made their apps voluntary. In fact, requiring all citizens to download and use an app that collects their personal information raises serious fundamental rights concerns.
- 55 The principle of legal basis is linked to legitimate purpose. The principle of legitimate purpose in Article 5 (1)(b) GDPR provides that data should be collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes. Both the European Commission and the EDPB recommend that specific legislation determines the purposes of data processing by contact-tracing apps and prohibits the processing of personal data collected for further purposes¹¹⁶. As a matter of fact, Article 8(2) of the Charter requires that personal data must be processed for specified purposes and on other legitimate basis laid down by law. While all other contact tracing apps provide clear purposes in their legislation, the Norwegian *Smittestopp* has been found in breach of the principle of legitimate purposes. The National Data Protection Authority has suspended the Norwegian app for having several purposes for one contact-tracing app.
- 56 Furthermore, there is a requirement of fairness and transparency under Article 5 (1)(a) GDPR that would require clear information on how the app would work as well as on users' rights. The right to information about what happens to somebody's personal data is a fundamental right under GDPR¹¹⁷. The GDPR, in its articles 12, 13 and 14, gives individuals a right to be informed about the collection and use of their personal data, which leads to a variety of information obligations by the controller. Article 8 of Convention 108+ also requires data controllers to inform data subjects about their rights. All apps in Denmark, Finland, Norway and even the initiatives in Sweden have dedicated web pages offering information on the app and users' rights. In addition, the source-code of tracing apps are made public in most Nordic countries, except in Denmark where the source code of the app was not publicly available for security concerns¹¹⁸.

¹¹⁶ European Union Fundamental Rights Agency, *Coronavirus pandemic in the EU - Fundamental Rights Implications* - Bulletin 2, European Union Fundamental Rights Agency, 28 May 2020, Accessed 20 April 2022 https://fra.europa.eu/sites/default/files/fra_uploads/fra-2020-coronavirus-pandemic-eu-bulletin-may_en.pdf.

¹¹⁷ European Union Fundamental Rights Agency, *Coronavirus pandemic in the EU - Fundamental Rights Implications* - Bulletin 2-28 May 2020.

¹¹⁸ European Union Fundamental Rights Agency, *Coronavirus pandemic in the EU - Fundamental Rights Implications* - Bulletin 2-28 May 2020.

- 57 The principle of proportionality is fundamental to restrictions of human rights during emergency and also to the processing of personal data. According to the data minimisation or data proportionality principles formulated in Article 5(1)(c) of the GDPR, the data processed should be reduced to the strict minimum. Measures that cannot achieve their intended purpose can never be considered proportionate, according to Article 5 of Convention 108+. Among all countries studied, only Norway's app was found in breach of the principle of data minimisation. *Smittestopp* Norway collected a large amount of data via GPS, which was not necessary and proportionate to the purpose of the app. Thus, the Norwegian Data Protection Authority has banned the *Smittestopp* app because the intervention was not proportionate. According to the Data Protection Authority, the impact on privacy was disproportionate as the app used GPS location which was then stored in a central database. The balance between privacy and necessity of the measures did not justify the processing of data, which had to be deleted.
- 58 The storage limitation enshrined in Article 5 (1)(e) GDPR is another fundamental principle, which is related to the retention period of personal data. According to Article 13 (2), 14 (2) GDPR, the data controller must inform users for what period their data is retained. In all countries studied, information about the limit of storing data was provided on the application website. Retention periods vary across countries with a maximum of 14 days in Denmark, 21 days in Finland and 30 days in Norway.
- 59 Regarding the storage of data, the European Commission and the EDPB recommend Bluetooth in order to prevent the collection of location data of users. The use of GPS raises the potential for surveillance. Using bluetooth rather than GPS can solve the problem of surveillance as Bluetooth does not capture or share location data. In the majority of Nordic countries, contact tracing apps are based solely on the processing of Bluetooth proximity data. Denmark and Finland contact tracing apps only process Bluetooth data. *Smittestopp* in Norway has been banned for using GPS collecting location data. Norway's first version of *Smittestopp* used both Bluetooth and location data. However, the second version of *Smittestopp* was only based on Bluetooth data.
- 60 In addition, the principle of accountability is fundamental to the GDPR. To ensure accountability (Article 5 (2) GDPR), the controller of any contact tracing application should be clearly defined. According to the European Commission and the EDPB, considering the amount of sensitive personal information that will be processed national health authorities could be the controllers for such an application, in accordance with Article 12 and 13 of the GDPR and Article 5 of the ePrivacy Directive. In all Nordic countries studied, the legislations regulating contact tracing apps clearly define their data controllers which are national health authorities such as the Danish Patient Safety Authority in Denmark, the Finnish Institute for Health and Welfare (THL) in Finland and the Norwegian Institute of Public Health (FHI) in Norway. Article 8 (3) of Charter stipulates that compliance with the right to privacy should be subject to control by an independent authority. National data protection authorities were involved in controlling compliance with the right to privacy and data protection in all countries studied. Other authorities were also involved in developing and authorising apps. In Denmark, the competent Ministry set up a Board of experts, including from the national DPA, to

assess proposals for the development of a contact tracing app. The Danish Parliament was also involved in authorising the *Smittestop* app. In Finland, the Finnish parliamentary working group on information policy was involved in a process to underline data protection and privacy requirements in advance.

4. DISCUSSION AND CONCLUSION

- ⁶¹ This paper has addressed the following questions: What digital responses to Covid-19, particularly contact tracing apps, were adopted in the Nordic countries? And how was the processing of personal data dealt with? What issues related to data protection were raised? Did they comply with personal data protection and privacy requirements?
- ⁶² Although the Covid-19 outbreak has taken many governments by surprise, the Nordic countries such as Denmark, Finland, Norway and Sweden reacted promptly, although differently, to the pandemic. Most of the Nordic countries have resorted to digital technologies such as contact tracing apps to respond to the Covid-19 pandemic. Almost all Nordic countries studied, except Sweden, have introduced contact tracing apps to handle the pandemic. However, some initiatives for non-contact tracing apps were developed in Sweden. This study has shown that Denmark introduced the *Smittestop*, Finland the *Koronavilkku* and Norway the *Smittestopp*. All contact tracing apps were well received and accepted as can be seen from the percentage of download in each country studied. As a matter of fact, the Nordic countries are characterised, among other things, by generally high levels of political and social trust.
- ⁶³ Privacy and data protection was a priority in countries like Denmark, Finland and Sweden, in contrast with Norway. In Denmark, before the app was released, the Danish Data Protection Agency (Datatilsynet), the Danish Institute for Human Rights and the Tech associations have raised concerns and made some recommendations, which were taken into consideration to improve the *Smittestop* app. To ensure a better security and privacy protection of the app, the Ministry of Health created an Advisory Board that included five experts in data privacy and security. The main issue in Denmark was related to transparency. The source code of the app was not made publicly available. The reason for this, according to the Danish National Health Authorities, was that it would increase the risk of security breaches, as persons or organisations with malicious intentions would be able more easily to hack or otherwise attack the solution. Data security was a high priority in the app, and the app has been thoroughly tested before being launched.
- ⁶⁴ In Finland, for example, the involvement of the Constitutional Law Committee of Parliament has greatly contributed to the respect of data protection and privacy. During the legislative process, the Committee required changes to be made regarding the protection of personal information as conditions for approving the Bill for the introduction of the *Koronavilkku* app in Finland. In Sweden, the Public Health Authority has not proposed any contact tracing app and has halted the development of a contact tracing app by the MSB because of privacy and data protection concerns. In Norway, the

National Data Protection Authority imposed a temporary ban on the Smittestopp app because the contact tracing app was found highly invasive. It was found, among others, in breach of the principle of proportionality by collecting a large amount of location data.

- 65 As a matter of fact, this paper has shown that although the following Nordic countries such as Denmark, Finland, Norway and Sweden rank among the most digitalised and the best democracies in the world, some digital measures taken, especially in Norway, during the spring of 2020 to handle the Covid-19 pandemic have infringed upon the right to privacy. Norway's *Smittestopp* app was even labelled by Amnesty international as one of the most dangerous Covid-19 tracing apps in the world with regards to privacy. In fact, any contact tracing system introduced by European countries must be compatible with among others the right to privacy guaranteed by Article 8 of the ECHR, as well as Articles 7 and 8 of the EU Charter of Fundamental Rights and the principles relevant to the protection of personal data set out in the GDPR, the e-privacy Directive and the Convention 108+.
- 66 Furthermore, this paper has highlighted the challenges that the pandemic has posed to democracies. One of the more significant challenges is the upholding of the rule of law and democracy as the pandemic has caught societies unprepared. Human rights have been in turmoil and under threat during the pandemic. Permissible restrictions or derogations were put in place. Measures taken in response to the Covid-19 outbreak had significant impacts on the rule of law in many countries. Many governments incorporated new data-driven technologies to reduce the spread of the virus. They have developed mobile apps to supplement manual contact tracing efforts by identifying users exposed to Covid-19.
- 67 The Covid-19 pandemic has indeed been a great catalyst for digital transformation in modern society as it has accelerated digital technologies. In just a few months' time in the pandemic, Covid-19 has pushed governments and tech companies to develop digital technologies to deal with the health crisis. However, although digital technologies can contribute to the protection of human rights such as the right to health and the right to life, digital technologies also raise privacy and data protection concerns, as well as other fundamental rights such as freedoms of movement and assembly. Therefore, in times of emergency and crisis, it is indeed crucial that digitalised and democratic societies conduct effective and appropriate balance to ensure that digital measures to protect health do not unnecessarily or disproportionately affect fundamental rights.
- 68 In the digital era with the proliferation of contact tracing apps, it is important to highlight the importance of the role of public trust as related to the protection of personal data. The acceptability of a digital contact tracing system depends on the trust that such a system can inspire citizens¹¹⁹. The public must have confidence that their personal data will not be misused by the government. To build trust, contact tracing apps must be designed with data privacy in mind since privacy concerns shape the acceptance of a government contact tracing app.

¹¹⁹ Council of Europe (2020), "Joint statement on digital contact tracing by Alessandra Pierucci, chair of Chair of the Committee of Convention 108 and Jean-Philippe Walter, Data Protection Commissioner of the Council of Europe".

- 69 This study has shown the models in the Nordic countries where contact tracing apps were adopted and quickly accepted and downloaded in Denmark, Finland and Norway. People in the Nordic countries are more likely to trust their governments and particularly their national health authorities as they trust that their data will be managed responsibly¹²⁰. In fact, Sweden has decided not to develop digital tools such as contact tracing apps for, among others, privacy concerns. Therefore, in order to ensure acceptance of digital solutions such as contact tracing apps, governments need to ensure respect for fundamental rights and gain public trust. This paper has also shown with the Swedish model that, in order to overcome the Covid-19 crisis, a civic solution such as civic duty and responsibility was preferred to a digital solution.

¹²⁰ J. VIBERG JOHANSSON, H. BENTZEN, N. SHAH, E. HARALDSDÓTTIR, G. JÓNSDÓTTIR, J. KAYE, D. MASCALZONI, J. VELDWIJK, "Preferences of the Public for Sharing Health Data: Discrete Choice Experiment", *JMIR Med Inform* 2021;9(7):e29614. DOI: 10.2196/29614.

RESUME :

De nombreux pays d'Europe, dont certains de la région nordique, ont eu recours aux technologies numériques pour surveiller et suivre la propagation du Covid-19, notamment en utilisant des applications de suivi de contacts. Le traitement des données à caractère personnel impliqué dans de telles applications soulève d'importantes préoccupations en matière de droits fondamentaux, notamment en matière de respect de la vie privée et de protection des données. Le Conseil de l'Europe, la Commission européenne et le Comité européen de la protection des données ont publié des lignes directrices et souligné que bien que les applications mobiles puissent jouer un rôle vital dans la lutte contre le Covid-19, elles doivent se conformer pleinement aux exigences en matière de protection des données personnelles et de confidentialité énoncées dans la législation de l'UE, y compris le Règlement général sur la protection des données (RGPD). Cet article examine les réponses numériques des pays nordiques à Covid-19, en particulier l'utilisation d'applications de recherche de contacts et leur traitement des données personnelles. L'objectif de cet article est d'étudier les modèles danois, finlandais, norvégien et suédois, ces pays étant classés comme les plus digitalisés d'Europe.

SUMMARY:

Many countries in Europe, including some from the Nordic region, have resorted to digital technologies to monitor and track the spread of Covid-19, in particular by using contact-tracing applications. The processing of personal data involved in such applications raises significant fundamental rights concerns, particularly about privacy and data protection. The Council of Europe, the European Commission and the European Data Protection Board issued guidelines and emphasised that although mobile applications can play a vital role in combating the Covid-19, they must fully comply with the personal data protection and privacy requirements sets out in EU law including the General Data Protection Regulation (GDPR). This paper examines Nordic countries' digital responses to Covid-19, particularly the use of contact tracing apps, and their processing of personal data. The aim of this paper is to study the Danish, Finnish, Norwegian and Swedish models, these countries being ranked as the most digitalised in Europe.

BIBLIOGRAPHIE

Books and Journal Articles

- Federico FABBRINI, Edoardo CELESTE and John QUINN (eds), *Data Protection beyond Borders: Transatlantic Perspectives on Extraterritoriality and Sovereignty*, Hart 2021.
- KOTKAS T. et al., *Finland: Legal Response to Covid-19*, in Jeff King and Octávio LM Ferraz et al (eds), *The Oxford Compendium of National Legal Responses to Covid-19* (OUP 2021). doi: 10.1093/law-occ19/e32.013.32
- GAWRONSKI, MACIEJ et al. *Guide to the GDPR*, Kluwer Law International B.V., The Netherlands, 2019.
- Gilles WILLIAM, *The Right to Privacy and the Right to Open Government: Two antagonist constitutional rights?* in JONASON Patricia (ed). *Privacy, Digitalization, Rule of Law. Some Contemporary. Challenges. Working paper 2021:1.*
- GØTZE M. *Digitally ready legislation as a new concept in Danish law: - an erosion of the rule of law?* in: Patricia JONASON & Anna ROSENGREN (ed.), *The Right of Access to Information and the Right to Privacy: A Democratic Balancing Act. Working Paper 2017:2.* Södertörn Höskola , Stockholm 2017.
- JONASON Patricia & Anna ROSENGREN, *On Democracy, the Right of Access to Information and the Right to Privacy* in: Patricia JONASON & Anna ROSENGREN (ed.), *The Right of Access to Information and the Right to Privacy: A Democratic Balancing Act. Working Paper 2017:2.* Södertörn Höskola , Stockholm 2017.
- JONASON Patricia and Thomas LARUE. *The Covid-19 pandemic and the Swedish Parliament, how to make use of a flexible constitutional framework*, Robert Schuman Foundation, 2020. <https://www.diva-portal.org/smash/get/diva2:1506343/FULLTEXT02>
- JONASON Patricia. *Covid-19 pandemic and data protection issues in Sweden*, in E-conference on Data protection Issues and Covid-19: Comparative Perspectives, Blog Droit Européen, 20 July 2020. <https://blogdroiteuropeen.com/2020/07/20/covid-19-pandemic-and-data-protection-issues-in-sweden-by-patricia-jonason/>
- JONASON Patricia (ed). *Privacy, Digitalization, Rule of Law. Some Contemporary. Challenges. Working paper 2021:1.*, Södertörn Höskola, Stockholm, 2021.
- Kristine ECK & Sophia HATZ (2020) *State surveillance and the COVID-19 crisis*, (*Journal of Human Rights* 2020), 19:5, 603-612, DOI: 10.1080/14754835.2020.1816163
- LEDENDAL, Jonas, LARSSON Stefan and WERNBERG Joakim, *OFFENTLIGHET i det digitala samhället*. Norstedts Juridik, 2018.
- Lintvedt, MONA Naomi, *COVID-19 Tracing Apps as a Legal Problem: An Investigation of the Norwegian 'Smittestopp' App* (June 16, 2021). University of Oslo Faculty of Law Research Paper No. 2021-18.
- Miranda RAMOS, Luis FELIPE, *Digital Contact Tracing and Data Protection: Assessing the French and Portuguese Applications* (December 31, 2020). Miranda Ramos, L. F. (2020). *Digital contact tracing and data protection: assessing the French and Portuguese applications*. UNIO – EU Law Journal, 6(2), 35-48. <https://doi.org/10.21814/unio.6.2.2767>.

- NGUYEN DUY Iris, The case of the Norwegian “Infection Stop” application in E-conference on Data protection Issues and Covid-19: Comparative Perspectives, Blog Droit Européen, 20 July 2020
- ORNSTON Darisu, *Denmark’s response to Covid-19, A participatory approach to policy innovation in Coronavirus Politics: The Comparative Politics and Policy of COVID-19*. Eds. Scott L. Greer, Elizabeth J. KING, Andre PERALA, and Elize MASSARD DA FONSECA 2020.
- POILLOT Elise, Gabriele LENZINI, Giorgio RESTA, Vincenzo ZENO Data protection in the context of Covid-19, A short (Hi)story, Roma Tre Press, November 2021.
- REICHEL Jane and CHAMBERLAIN Johanna, The Relationship Between Damages and Administrative Fines in the EU General Data Protection Regulation (September 1, 2019). Faculty of Law, Stockholm University Research Paper No. 72 (2019), Mississippi Law Journal, 2020. Available at <http://dx.doi.org/10.2139/ssrn.3447854>,
- Samuel D. WARREN; Louis D. BRANDEIS. Harvard Law Review, The Right to Privacy, Vol. 4, No. 5. Dec. 15, 1890.
- SANDVIK Kristin Bergtora, “Smittestopp”: *If you want your freedom back, download now*, May 2020, Big Data & Society 7(2), July 2020, DOI:10.1177/2053951720939985
- Simon TRANG, Manuel TRENZ, Welf H. WEIGER, Monideepa TARAFDAR & Christy M.K. CHEUNG (2020) One app to trace them all? Examining app specifications for mass acceptance of contact-tracing apps, European Journal of Information Systems, 29:4, 415-428, DOI: 10.1080/0960085X.2020.1784046
- Steve JACOB & Justin LAWARÉE (2021) The adoption of contact tracing applications of COVID-19 by European governments, Policy Design and Practice, 4:1, 44-58, DOI: 10.1080/25741292.2020.1850404
- Taylor HEATHER, Data Protection in a European World of Ideals: An Unforeseeable Division of Camps (A Study of the Approach Towards Data Protection of the European Court of Justice and the European Court of Human Rights) (February 19, 2021). Available at <http://dx.doi.org/10.2139/ssrn.3788816>

Official published sources

- Council of Europe. Digital solutions to fight Covid19. Data 2020 Protection report. Council of Europe. October 2020. <https://rm.coe.int/prems-120820-gbr-2051-digital-solutions-to-fight-covid-19-text-a4-web-/16809fe49c>.
- Datatilsynet, *Datatilsynet om app: Frivillighed og gennemsigtighed er afgørende*, 17-04-2020, available at: <https://www.datatilsynet.dk/presse-og-nyheder/nyhedsarkiv/2020/apr/datatilsynet-om-app-frivillighed-og-gennemsigtighed-er-afgoerende>
- Denmark, *News from the Danish Ministry of Health*, (‘Nu er appen smittestop klar til danskerne’), available in Danish at: <https://sum.dk/nyheder/2020/juni/nu-er-appen-smitte-stop-klar-til-danskerne>
- Denmark Smittestop <https://smittestop.dk/en>
- Eduskunta Riksdagen. Constitutional Law Committee of the Parliament, *Committee Statement PeVL 20/2020 vp* (17 June 2020). https://www.eduskunta.fi/FI/vaski/Lausunto/Sivut/PeVL_16+2020.aspx

- European Union Fundamental Rights Agency, Coronavirus pandemic in the EU - Fundamental Rights Implications - Bulletin 2, European Union Fundamental Rights Agency, 28 May 2020 https://fra.europa.eu/sites/default/files/fra_uploads/fra-2020-coronavirus-pandemic-eu-bulletin-may_en.pdf
- European parliament (EPRS), States of emergency in response to the coronavirus crisis: Situation in certain Member States III, June 2020, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/651972/EPRS_BRI\(2020\)651972_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/651972/EPRS_BRI(2020)651972_EN.pdf)
- European Commission. *Digital Economy and Society Index (DESI)*, 23 November 2021, <https://www.nordicom.gu.se/en/latest/news/denmark-finland-and-sweden-are-eus-most-digital-countries>.) ; Denmark, Finland, Sweden are the top three most-digital EU countries, Norway is also monitored by the DESI indicators and would have been placed fifth).
- European Data Protection Board, *Temporary suspension of the Norwegian Covid-19 contact tracing app*, 22 June 2020. https://edpb.europa.eu/news/national-news/2020/temporary-suspension-norwegian-covid-19-contact-tracing-app_en
- European Union Fundamental Rights Agency, *Coronavirus pandemic in the EU - Fundamental Rights Implications - Bulletin 2*, European Union Fundamental Rights Agency, 28 May 2020, p. 55, available at <https://fra.europa.eu/en/publication/2020/covid19-rights-impact-may-1>.
- Finland, Act (582/2020) on Temporary Amendments to the Communicable Diseases Act. <https://www.finlex.fi/fi/laki/alkup/2020/20200582>
- Finland, Constitutional Law Committee statement, *Perustuslakivaliokunnan lausunto PeVL 20/2020 vp* – HE 101/2020 vp.
- FHI. Smittestopp – ny app fra Folkehelseinstituttet (arkivert), 16. 04.2020, <https://www.fhi.no/historisk-arkiv/covid-19/nyheter-2020/apr/ny-app-fra-folkehelseinstituttet/>
- FHI, *FHI stopper all innsamling av data i Smittestopp*, 15.06.2020, <https://www.fhi.no/historisk-arkiv/covid-19/nyheter-2020/jun/fhi-stopper-all-innsamling-av-data-i-smittestopp/> Finnish Government, *Government, in cooperation with the President of the Republic, declares a state of emergency in Finland over coronavirus outbreak*, Press Release 100/2020 of 16.03.2020, available at: <https://valtioneuvosto.fi/en/-/10616/hallitus-totesi-suomen-olevan-poikkeusoloissa-koronavirustilanteen-vuoksi>
- FRA *Coronavirus COVID-19 outbreak in the EU: Fundamental Rights Implications-Denmark*, 20 March 2020. p.2 https://fra.europa.eu/sites/default/files/fra_uploads/denmark-report-covid-19-april-2020_en.pdf
- Folkhälsomyndigheten. *Surveillance of communicable diseases*, <https://www.folkhalsomyndigheten.se/the-public-health-agency-of-sweden/communicable-disease-control/surveillance-of-communicable-diseases/>
- FOR, *Forskrift om digital smittesporing og epidemikontroll i anledning utbrudd av Covid-19*, Dato, FOR-2020-03-27-475, <https://lovdata.no/dokument/LTI/forskrift/2020-03-27-475> and <https://www.regjeringen.no/contentassets/116076d9a39b473a97d97474048e1fb0/kgl.-res.-27.-mars-digital-smittesporing.pdf>
- FSFE, *Denmark keeps source code of Coronavirus tracing app secret*, 29 June 2020, <https://fsfe.org/news/2020/news-20200629-01.en.html>
- LOV, *Lov om vern mot smittsomme sykdommer [smittevernloven]*, LOV-1994-08-05-55, <https://lovdata.no/dokument/NL/lov/1994-08-05-55>

- OECD/European Observatory on Health Systems and Policies (2021), *Denmark: Country Health Profile 2021, State of Health in the EU*, OECD Publishing 2021, Paris, p. 17. <https://doi.org/10.1787/2dce8636-en>.
- OECD, *Tracking and tracing COVID: Protecting privacy and data while using apps and biometrics*, (23 April 2020, Accessed from https://read.oecd-ilibrary.org/view/?ref=129_129655-7db0lu7dto&title=Tracking-and-Tracing-COVID-Protecting-privacy-and-data-while-using).
- OECD-OPSI, *Danish COVID-19 infection tracing app (Smitte|stop)* <https://oecd-opsi.org/covid-response/danish-covid-19-infection-tracing-app-smittestop/>
- Regjeringen, *Omfattende tiltak for å bekjempe koronaviruset*, Pressemelding 12.03.2020, https://www.regjeringen.no/no/dokumentarkiv/regjeringen_solberg/aktuelt-regjeringen_solberg/smk/pressemeldinger/2020/nye-tiltak/id2693327/
- Riksdagen. *Smittskyddslag (2004:168)* https://www.riksdagen.se/sv/dokument-och-lagar/dokument/svensk-forfattningssamling/smittskyddslag-2004168_sfs-2004-168/
- Riksdagen. *Provisional amendments to the Communicable Diseases Act*, 16 April 2020, <https://www.riksdagen.se/en/news/2020/apr/16/provisional-amendments-to-the-communicable-diseases-act/>
- Riksdagen. *SOU 2022:10, Sverige under pandemin*. https://www.riksdagen.se/sv/dokument-och-lagar/dokument/statens-offentliga-utredningar/sverige-under-pandemin-del-2_HAB310d2/
- Statsministeriet. Denmark, press conference, *speech by the Prime Minister on 11 March 2020*, http://stm.dk/p_14916.html
- Sundhedsministeriet. *Nyt Advisory Board skal rådgive myndighederne om den kommende danske smittestops-app*, 01.05.2020. <https://sum.dk/nyheder/2020/maj/nyt-advisory-board-skal-raadgive-myndighederne-om-den-kommende-danske-smittestops-app>
- Sundhedsministeriet. *Politisk aftale om frivillig smittesporingsapp for COVID-19*. Press release in Danish of May 15 2020 from the Ministry of Health, "Political agreement on voluntary contact tracing app for COVID-19", 2020, available at: <https://sum.dk/nyheder/2020/maj/politisk-aftale-om-frivillig-smittesporingsapp-for-covid-19>
- 1177 Vårdguiden. *Covid-19 vaccine in Sörmland*, <https://www.1177.se/Sormland/sjukdomar-besvar/lungor-och-luftvagar/inflammation-och-infektion-ilungor-och-luftror/om-covid-19-coronavirus/om-vaccin-mot-covid-19/covid-19-vaccine-in-sormland-information-in-other-languages/>

Other published sources

- Amnesty International, *Bahrain, Kuwait and Norway contact tracing apps among most dangerous for privacy*, 16 June 2020, <https://www.amnesty.org/en/latest/news/2020/06/bahrain-kuwait-norway-contact-tracing-apps-danger-for-privacy/>
- IDA Denmark, *IDA's standing on digital surveillance instruments during covid-19 (IDAs holdning til digitale overvågningsredskaber under covid-19)*, <https://ida.dk/media/6468/idasanbefalinger-til-corona-app.pdf>
- KTH, Hello Hossein **SHOKRI GHADIKOLAEI**, Postdoc at the Division of Network and Systems Engineering, 11 May 2020 <https://intra.kth.se/en/eecs/aktuellt-pa-eecs/nyheter/hej-hossein-shokri-ghadikolaei-postdoktor-pa-avdelningen-for-natverk-och-systemteknik-1.983485>

- NIKEL D., *Norway: 1.4 Million People Download Coronavirus Tracking App Despite Security Concerns*, Forbes 2020, available at <https://www.forbes.com/sites/davidnikel/2020/04/25/norway-14-million-people-download-coronavirus-tracking-app-despite-security-concerns/?sh=6a357c587832>
- Norway Today. *Norway is launching a new infection control app on Monday*, 20 December 2020, available at <https://norwaytoday.info/news/norway-is-launching-a-new-infection-control-app-on-monday/>
- NRK, *Nesten en million har lastet ned smitteapp (in Norwegian)*, 17 April 2020, available at: <https://www.nrk.no/norge/nesten-en-million-har-lastet-ned-smitteapp-1.14985000>
- Reuters, *Finland launches its own coronavirus tracing app*, 31 August 2020, available at: <https://www.reuters.com/article/us-health-coronavirus-finland-app-idUSKBN25R1N0>
- The Local. *Smittestop: Denmark launches English version of Covid-19 contact tracing app*, December 18, 2020, <https://www.thelocal.com/20201218/smittestop-denmark-launches-english-version-of-covid-19-contact-tracing-app/>
- The Local. *Norway launches 'smittestopp' app to track coronavirus cases*, 16 April 2020. <https://www.thelocal.no/20200416/norway-launches-smittestop-app-to-track-coronavirus-cases/>
- Institute for Internet and the Just Society, *COVID-19 Technology in the EU: A Bittersweet Victory For Human Rights?*
- Lund University (Lunds universitet), *Covid Symptom Study, Data Integrity (Dataintegritet)*, <https://www.lunduniversity.lu.se/article/covid-symptom-tracker-app-launched-sweden>

Websites for contact tracing apps

- Denmark Smittestop. <https://smittestop.dk/about-the-app/>
- Finland Koronavilkku. <https://koronavilkku.fi/en/privacy/>
- Norway Smittestopp. <https://www.helsenorge.no/en/smittestopp/>
- Sweden Covid Symptom Study Sverige. Lund University/Uppsala University <https://www.covid19app.lu.se/covid-symptom-study-sverige>