Thank you, Chairman. Could you start with a brief outline of your educational and professional history? M.D., Doctor in Medical Science (Ph.D) with a specialization in international health and travel medicine. Work history in clinical trials until 2010 and after that in various roles in the vaccination program as a vaccine safety physician and as an effectiveness research physician. In the last few years, I mostly researched influenza, coronavirus, RSV and pneumococcal disease. Who is your employer? The Finnish Institute for Health and Welfare (THL). In addition to this expertise, do you have any other positions of trust that you would like to mention here? For the past one and a half years I have been the chairwoman of SAGE, the World Health Organization's working group of experts on vaccination. Three years before taking this role, I was chairwoman of SAGE's working group on COVID-19. And that was also with the WHO? SAGE, yes. This lawsuit is related to the so-called COVID pass legislation, or certain sections of the Communicable Disease Act, which was enacted in the fall of 2021. Have you been in any way involved in this legislative process, or has your expertise been consulted on it? Yes, I have been consulted, and my role during COVID-19 was to provide literature reviews together with other colleagues at the Ministry of Social Affairs and Health (STM), and of course also for the use of THL itself. If you can answer in general terms, what different sources did you personally / THL collect and draw this knowledge base from? Well, there were several sources, so we exchanged information with colleagues from other countries, especially among the Nordic countries, but also with other EU countries. The EU Health Security Committee organised, perhaps not weekly, but several meetings where we could hear the latest data from manufacturers. And then, of course, from this WHO position, I was able to hear every week the latest scientific findings from the various manufacturers before they reached the public. And of course, then we followed up with publications that mostly came as preprints, meaning they were not peer-reviewed. And we then made summaries of these for the use of the ministry and the THL. And which was the ministry to which you provided this information? The Ministry of Social Affairs and Health. (STM) Thank you. What was the COVID situation in Finland in autumn 2021? Let's talk about September onwards, right up to the end of the year. How would you describe the COVID situation? We were on a very upward curve. As the weather got colder, COVID-19 rates increased, laboratory-confirmed cases increased, and infections led to illnesses, hospitalizations, and deaths. It was very much on an upward curve. From your point of view and that of the THL, how did you understand the aim of the COVID pass legislation or the requirement of a COVID-19 certificate? Why was such a law enacted? Well, it was to protect individuals and society. Individuals from infection and disease, and society from over-extending hospital capacity. At the time it was started, the understanding was that vaccination could prevent a significant amount of infections. The situation then changed quite drastically during that autumn, and when we saw the new variants coming, especially the Omicron variant that came after the Delta, the parameters that were used as a basis for this legislation in late summer and early autumn were no longer valid in the same way. Were you personally in favour and did THL as an organisation advocate for the introduction of this COVID pass, i.e. the application of this COVID pass legislation? Yes, the first statements we made were in favour. It was well known that there were not enough intensive care beds in Finland, and if the epidemic had started to accelerate in the autumn in the same way as in China and Italy in early 2020, for example, we would have had quite a catastrophic situation. And therefore it was thought that by restricting people's access to public events (which were seen as transmission-friendly environments) with this COVID pass, so that whether the person was vaccinated or showed no detectable COVID from his respiratory tract within a certain number of hours, the pass would then protect both individuals and society. That was the starting point. And it was not only Finland's idea, but also that of the EU, and it also fulfilled the Commission's wish to work on this kind of national or even EU-wide standardised digital vaccination certificates. In this way, there were two purposes. So, how did you assess the effectiveness of the COVID vaccines that were on the market in autumn 2021? And I would ask you separately to assess, if possible, in terms of preventing the infections themselves or the infectiousness at a general level, and then in terms of preventing so-called serious forms of the disease. And by serious forms of disease, I understand that you should refer to the need for medical treatment, as it were, or at least that is what I mean by my question, so If you can say

something about this. When we started working on the COVID pass, at the end of summer 2021, we had information about the original Wuhan virus, Alpha and Beta and also Delta, and how well the infection caused by them was preventable. It didn't prevent infections nearly as well as it prevented severe disease. The prevention of infection was perhaps in the order of 50 %, and for severe disease even over 90 % at that time in the early stages. This protective effect against infection fell quite quickly, we were talking about some months, and that at six months it was already at zero, when these initial variants or Alpha, Beta and Delta were in circulation. In contrast, at that time the protective effect against severe disease remained for many months and the decline rate was very small, just a few percentage points. Then in October we got the first data from South Africa on the Omicron variant. And the information was then of course shared informally, and the first research reports on Omicron and the effect of vaccines on its transmission or the disease caused by it were published in late November. And of these, in fact, we then made our first science report on December 10th. And then it was quite clearly seen that the protective effect both for severe disease, and then for transmission in particular, had come down 20-30 percentage points. And also its protective power fell even faster, we were talking about two or three months, when it went from a reasonable 40 percent down to zero. So clearly this situation had changed. The virus had been able to develop a form of itself that evaded that antibody protection with the result that even the vaccinated were shedding the virus and might even be shedding as much as the unvaccinated. So the basis for this COVID pass, in the form it was, clearly weakened towards the end of the year. And in fact, at the end of the year, then, when the STM asked again from the THL what our current thinking was about extending the validity of the COVID pass, we then stated, at the turn of the year, that the conditions from six months earlier were no longer met. Right. Do you have any information as to whether the COVID pass was extended after the turn of the year or did they follow your recommendation and discontinue it? As I recall, it was valid until June 2022 officially, but how much it was used for different events or restaurants, I don't have a very clear idea. I guess you'd have to ask them separately how much of it was implemented. This discussion took place in early 2022, when we made our statement and expressed our view. We have a couple of exhibits on the record here. We have them under evidence numbers V2A and 2B. There is this COVID information from STM and THL, but before I present it or ask you about it, I will ask you a question without those documents. You told us that the Omicron variant had been detected and it was making its appearance in late autumn 2021. Was, however, the so-called mainstream virus, still the Delta variant at that time in November-December 2021? So yes, in Finland the first Omicron occurrences were confirmed in December, if I remember correctly. It should be checked now when they came. The situation doesn't immediately change, it is not black and white. One variant comes down and the other goes up. We were in a dynamic phase. Yes. Do you remember exactly, and if you don't remember we can look at the evidence, but do you remember in December 2021 what the relationship was between these variants? Out of the confirmed cases of infection, what part was Delta and what was Omicron? I don't remember those ratios, I do not have the curve here. It is better if we look it up from there. And of course, we have to take them with the caveat that it depends on how many samples are taken. And that's why we set up this wastewater monitoring, so that we can better see these relationships at the population level. The test samples are influenced by the fact that especially in the beginning they might have been targeted more at very sick people and less at not-so-sick people. So there can be this kind of bias from that point of view. Yes. Well, let's look at that first evidence, the V2A. We have it on here now, was it number three? At least it doesn't show here. Right, it's not on any screens yet, it just takes a while. If you, Iiris, first show the first page, Hanna Nohynek will see from which document this has been taken. So this is the type of document we have here as evidence, the STM and THL status report on the COVID-19 situation. And then if you go to the page that was just shown. Here is a statement, and this was dated 9 December 2021, that nine Omicron cases have been identified. First of all, I would ask, since this now appears to be a joint document of the THL and STM, as well as the other equivalent to be looked at in a moment, were you involved in the preparation of such info documentation, or were you aware that these status reports were prepared? Yes, we prepared these

together, so this was prepared by our virologists, they did these variant analyses weekly, as in fact they still do, though less frequently. From this, you can clearly see that the Delta has been the predominant virus up to week 45-46. What happened since then is that Delta gradually decreased and Omicron gained a foothold. But as you can see from these, there are other variants out there. And in this situation, nine cases had been observed and several cases were under investigation. It takes a little longer than a week to obtain the sequence data. So these are always then completed afterward. Yes. So, Omicron is also referred to in the next evidence V2B. And here the date of this document seems to have been 21 December 2021. So here we have 83 confirmed cases, and apparently this information has come from your laboratories? It comes from our laboratories. Our virologist does these sequence analyses and we see them weekly in our meetings. During that time I think we held COVID status update meetings every other day. And during those, we then jointly compiled these slides for STM and THL media briefings. In this same slide, there is in that last ball a statement that the vaccine protection against severe disease is still very good and after the third dose almost as good as against previous forms. Was this still the THL's view back in December 2021? Yes, so this was precisely the fact that the bad news was that Omicron had come and it so quickly seemed to take over. It was very fast-spreading. But then when we looked at the protection of the vaccine specifically against disease leading to serious cases of hospitalization, then although we had a vaccine that coded the original virus, it also protected against Omicron. That was really good data, and this data did not come from our own data, it came from the South African and then also from the UK data. They were very quick at getting it from around the world. It took us a bit longer to produce our own reports. We don't need to look at these pieces of evidence any further. We presented them yesterday to the court as written evidence. These were just a couple of things I wanted to go over with you. You talk about the vaccination passport in that expert report that we requested. What do you mean by that? I understand that you saw it as some kind of, and it can be read in your testimony as perhaps some kind of better alternative to the COVID pass at some point. What do you mean by that? Well, the idea of the COVID pass was that we would stop the spread of the virus and thereby reduce the burden of disease in society. You could get it with two doses of vaccine, three doses of vaccine or a negative test result. As I recall, within 75 hours. It has to be checked. Then when Omicron came along and when more information came out that even the vaccinated can excrete the virus and in such a way that you can transmit it to someone else, then it became clear without a doubt that people like this, who think they can come to an event with the COVID pass and stay healthy, well they don't get that protection anymore. So they are in this kind of event, a public event, at high risk of getting the Omicron variant from a vaccinated person. And that is why it seemed misleading to talk about a COVID pass protecting you somehow, when unvaccinated people in that situation would be just as vulnerable regardless of whether the person next to them were vaccinated or unvaccinated. Right. And how do you think this could have, maybe it was already included in that answer but for the sake of clarity, how do you think this passport should have or could have been changed, and in what way? Well, that depends entirely on what the passport is used for. To this day, when I go to WHO headquarters in Geneva, I have to show that I have the recommended vaccine doses, and I show them my COVID vaccination passport and I'm allowed in to lead the meeting. So this instrument is still being used, but there has to be a very clear vision of what it is being used for. And what it was designed for in Finland, specifically to prevent transmission and reduce the burden of disease, only part of it was justifiable. That is why the THL then issued its statement at the turn of the year that when the majority of the population had the vaccinations required for the COVID pass and Omicron is the predominant virus, then the vaccines in this situation do not effectively prevent the transmission of infections. What is your assessment of the safety of these vaccines that were used in Finland as well as more broadly in the EU and the process by which they were selected for use? Well, these vaccines were studied in clinical trials in phase one and two and then they received marketing authorisation after they had been in phase three randomised controlled trials, where it has to be granted that the follow-up period was not as long as it normally is, but COVID was considered to be such a serious pandemic that this kind of accelerated marketing authorisation arrangement makes sense, that it saves lives. Subsequently,

after the marketing authorisation was granted, companies and public health institutions were required to carry out safety monitoring, and in these safety monitoring studies, various serious rare adverse events came to light, such as myocarditis caused by the RNA vaccine or very serious thrombotic, thrombocytopenic syndrome caused by the adenovirus vector vaccine. On this basis, public health institutions worldwide drew their own conclusions and limited the use of these vaccines to groups where these risks were not considered so high. It is always a question of benefit versus harm, and the benefit must greatly outweigh the harm. It is on that basis that the public health authorities make recommendations. The marketing authorisation holder naturally has to, or the drug safety authorities will, restrict the marketing authorisation for a particular group. The product information leaflet will include these researched findings and any restrictions. But if you look at the big picture with the billions of doses of COVID vaccines that have been administered in the world, when comparing benefit and harm, the benefit greatly outweighs the harm. As you are also there in the WHO vaccine group, you are both a member and now also chairwoman, what is the WHO's view on whether and to what extent these COVID vaccines and other interventions have achieved benefits? The WHO's view is that these vaccines saved millions of lives. The sad thing has been that especially the lower-income countries did not get as many vaccines as they would have wanted and needed in the early stages of the epidemic. We thought that the mortality or morbidity there would not be as high as in rich countries, but now with further analysis it has been found that the old population and those at risk there have also showcased high mortality and morbidity. What is your view and that of the THL's, regardless of whether they are the same or different, on the reliability of these COVID tests, namely the PCR tests, that have been used in Finland? PCR tests are very sensitive and they are very specific too. The problem with them, of course, is that they can remain positive for a long time because they detect this kind of genetic material. It doesn't necessarily tell the whole picture of infectivity. So a person can still excrete remnants of the virus and no longer be infectious. It tells you that you have encountered the virus and become infected, but the secretion can last for a long time. In contrast, antigen tests are not as sensitive nor as specific. And of course, they have been used and are still being used. Just to check, when you mentioned, going back a little bit, you mentioned that you go to that WHO office. So where is it located, where are these meetings held? In Geneva. Yeah. You go there to Geneva, and what's the procedure there that you have to pass to get to that meeting? You have to show an electronic vaccination passport there. When you show your normal passport the guard will check which country you are a citizen of and who you are, and then you show the electronic passport and only then you can get in. Well, what would happen if you didn't have that passport? I actually don't know if they would turn you back and you would have to get the recommended vaccinations. It hasn't happened to me, my mobile phone has always worked and the e-passport has always been easily visible from there. Well, do you know people like - and I'm not going to go any further here into the topic brought up by the plaintiff, but this is the question I thought I'd ask. Do you know the following people - Aseem Malhotra or Astrid Stuckelberger? I have heard the first name because the plaintiff has asked whether a conversation with the first person would be possible. With you? Yes. And then the other name I don't remember hearing. Though emails can sometimes go to spam or be forgotten. Will the conversation that we asked for between you and Malhotra be arranged? We haven't set a date yet. Just a moment, Chairman. I'll check on something. That's all at this point, thank you. Thank you, Chairman. I am the plaintiff's lawyer, Aki Nummelin. You mentioned that at some point it became clear that a vaccinated person can also spread the virus to a vaccinated person and then become ill. When did this become clear? I do not have that date here, but it can be found in our scientific reports. The first weekly bulletin in which we reported on this Omicron variant to the STM was on 10.12. So before that, of course, we had heard about this in these informal consultations and networks, but that was the first time South Africa
had published based on a very small sample size of how Omicron evades the antibody protection induced by either having had the disease or having received the vaccine. I would now like to show the plaintiff's written exhibit number 13. The plaintiff's exhibit number 13, a medical study from August 2021; they state in the summary that, among other things, the load of coronavirus measured

from a person who had received the full COVID vaccine series was similar to that of the unvaccinated and that the vaccinated also spread coronavirus. Are you familiar with the study? Yes, so this has been known ever since the original vaccines came into transmission studies. They weren't studied by the manufacturer for marketing approval, but we know that there isn't a 100 % protection against this infection and that there are very large individual differences in how much virus an individual excretes. There are super-spreaders and then there are those who excrete very little. And, as pointed out, it is entirely possible that a vaccinated person can shed as much virus as an unvaccinated person. It depends on the variant, it depends on the immunity of the person and other individual factors. This in itself is not new even in August, this was known before. Has this possibly been known as early as the end of 2020? We should probably look at that from the work that has been done and published. Not all of them may even have been published, and some of it may be work done on just a few individuals. But before August 2021, this thing was known, that vaccinated people also spread COVID. Yes. This was discussed among researchers, and this is actually typical of all respiratory viruses, so there is not really any vaccine that would prevent 100 % of viral secretion. With bacteria, the situation is different. Perhaps a small detail. Is it the case that once a person has received the COVID vaccine, it is only after 21 days that the person is recorded as vaccinated? It depends on the analysis for which that information is needed. In these randomized controlled trials, we talk about per-protocol analysis or intent-to-treat analysis. Per protocol can be, for example, 14 days or 7 days. Intent-to-treat starts at the moment the person is vaccinated. That's where the calculation of protection starts. Depending on what the data is needed for, the analysis and the time that is needed can vary. What can the criteria be for determining where this information is needed? Well, public health people need that intent-to-treat data because it affects our disease burden. Vaccine efficacy starts slowly and ultimately peaks and then it comes down from there. And everything that happens in between has an impact on the burden of disease. But if we think about something, let's say the passport issue or for instance when it can be said that a person is sufficiently safe, then we need a longer time, because we know that the human immunological mechanism isn't on/off, but it starts to work little by little. Do you know whether the COVID pass came into effect immediately after taking the COVID vaccines? We should check that now to see if it was from that day, that vaccination day, and how it was among the different countries and how it was with us. I don't have those details here, but it can be checked. Would you have an educated guess as to how it was done in Finland? Well, from a biological point of view, I would think that after the first dose, it can't be at the same moment, but it takes several days. And after the second dose, immunologically speaking, the protective effect is achieved much more quickly. We're talking about a few days. Let's assume that there is a situation in which an unvaccinated person enters a room, let's say a large room, with people who have taken the COVID vaccines, and their passes are green, so to speak, is it possible that this unvaccinated person could pose a danger to the vaccinated people in the room? Could you think of what the answer to this kind of a situation would have been in December 2021. Well, if in that room these vaccinated people are fragile, then the unvaccinated, of course, despite the vaccination, can be dangerous to them. And this was precisely the reason why the THL recommended to the STM to create Section 48a of the Communicable Diseases Act, so that health professionals would not be unvaccinated but would be vaccinated and in that way would be less dangerous to these fragile already-vaccinated, because we know that the protective effect is not 100 %. It's at best something like 90, but especially in older people, it comes down quickly. Is it possible then to have a similar situation at the same time, in which a vaccinated person enters a room where there are a lot of vaccinated people. Is it possible that this vaccinated person entering the room could transmit the coronavirus, infecting the other people already in the room? Yes. This was the problem with the COVID pass that the THL wanted to highlight at the turn of the year, that the coronavirus passport as it was understood in the early autumn of 2021, could create a false sense of security, because the vaccinated person may excrete the virus. If the vaccinated person is very fragile, has a lot of underlying diseases and his response to the vaccine is not very strong, then he is at risk. When did you first have access to this information, the information that you have just given us? Well, we already had that information in

early autumn, based on this article, for example. But this is not an on-off thing, it is a question of gradients. And if the gradient is more on the positive side, that it is useful, then that's why the THL recommended implementing the COVID pass, and the purpose was explicitly to protect fragile people and stop the circulation of the virus. But then when these reports started coming in from South Africa in October and especially in November that despite vaccination, Omicron is evading the antibody protection, then the question was raised as to how sensible this pass is. And then when we received additional information, it led to the fact that at the turn of the year when STM asked THL whether to extend the validity of the COVID passport, then we stated that the majority of the population has the vaccinations required for the COVID pass, but with Omicron being the predominant virus, the vaccinations do not effectively prevent the transmission of infection in situations where the COVID pass would be in use. But the risk of serious disease in those vaccinated is very significantly reduced. This was our statement to the STM in that situation. But if the information was already available in the summer of 2021, why was this not then passed on to the STM, or was it? So in these literature reviews that we wrote, we did reference this information. But as I said, it is not an on-off situation where all vaccinated would excrete a lot, but we knew that there are super spreaders. And on average a vaccinated person back when there also was Alpha, Beta, and Delta around, so on average the vaccinated excreted less. You talked about fragile people who are protected by the vaccine, so define a fragile person. You can either be fragile in terms of age, we are talking about people over 80 or over 75, or you can have an underlying disease that affects your immunity, i.e. you have cancer, you have cytostatic treatment, you have an immune disease and you are taking biological drugs that affect your immunity. These are fragile people and these are the people we particularly wanted to protect, because it was known that even getting infected with a virus could lead to a path that would lead to death. No further questions. Chairman, perhaps I missed the question in relation to the content of this statement. Would you confirm the contents of this expert report that we have here in the court file, and I think you have it in front of you, dated August 30, 2023. Can you confirm that it was given by you, and you continue to be of the same opinion as what is stated in that report. Yes, the facts that were available to us at the time, that is what I have recorded here. Even after this, I would like to return once more to the question of the vaccination passport, as I am not quite sure that I understood it correctly. And now that I read it here in the statement, and I think it is clearly stated here, I would like to ask once again whether that's the way you saw it. That is, on the last page of the statement, which is the third page, you first state in the first sentence of the top paragraph "THL also found that the unvaccinated could have been more efficiently protected by using a vaccine pass rather than a COVID pass." Then you go on to talk about how the COVID passport could be obtained even with a negative test result, resulting in an opportunity to get into an event restricted by the pass without having vaccine protection. Well, then you state there in the last paragraph, just before the signatures, "Therefore the THL considered that when using the COVID pass, it should only be issued based on vaccination status or contracted disease." Am I now understanding correctly that, as such, the THL still considered in January 2022 that the COVID pass might be justified, but instead of being granted based on vaccination, contracted disease, or a negative test result, if this third category dropped out then this would still be ok? Yes. Then we can look at what the reasons are for using it, what the pros and cons are. And if I compare again with the WHO situation, the WHO has taken the view that they are protecting themselves and the people in the building by only allowing vaccinated people in. Thank you. That's all I got, Chairman. Was there a request for a fee for today? Travel expenses only. And the amount is? Two times 2.95. Six euros. Is it to be paid by the state? Yes, we accept this. That amount will be paid by the State alone. Yes.