INTOSAI Supervisory Committee on Emerging Issues
COVID-19 Expert Group

Remote auditing: technological challenges and solutions

July 24, 2020 online meeting

Full video of the session is available here.

SUMMARY

The COVID-19 Expert Group initiative within INTOSAI Supervisory Committee on Emerging Issues chaired by the Accounts Chamber of the Russian Federation proceeded with its series of webinars on various aspects of SAIs adaptation in the conditions of the pandemic.

The second webinar held on July 24, 2020 centered upon **challenges and solutions of remote auditing** and was attended virtually by more than 150 SAI representatives from 50 countries with the help of the **Blackboard application** provided by the INTOSAI Development Initiative.

The audience got acquainted with practical experience of **SAIs France, Indonesia, Peru, Russia, UK and USA,** and showed genuine interest in very specific aspects of remote audit solutions.

In general, various aspects covered by the speakers fell into two major categories: **employees working remotely from office**, and **SAIs working remotely from auditees**. The discussion topics included both unexpected challenges and opportunities and ranged from **staff mental health, employee surveys** and providing **necessary equipment for teleworking** to developing **targeted software**, ensuring **security of information** and trying to elaborate the very **concept of remote audit**.

One of the most common highlights of the presentations was that the **transition to remote auditing had already been underway for some time before the pandemic** in line with the general course to digitalization of SAI work, so that the advances made previously in this area proved useful to overcome the initial shock of the COVID-19.

However, undoubtedly, the emergency situation in many cases provided **a significant impetus for a more decisive action** in introducing remote audit techniques and their further successful development.

In addition, the SCEI Secretariat presented the international **Observatory on COVID-19** devised by SAI Peru in order to register the measures taken by governments and SAIs all over the world in view of the pandemic.

This Observatory shall become an **analytical, interactive and visual part of the SCEI initiative**, therefore all INTOSAI members were invited on behalf of the Chairman of INTOSAI, Chairman of the Supervisory Committee on Emerging Issues and Chairman of the Accounts Chamber of the Russian Federation, Mr. Aleksei Kudrin, to participate in **a special survey on SAIs response to the COVID-19**.

The responses provided by each SAI will be represented in open access in a systemic way providing an easy-to-use single access to diverse and segmented **sources of information on SAIs experience during the pandemic**, as well as underlie the SCEI recommendations to the INTOSAI Governing Board.

The **next webinar** of the SCEI Covid-19 Expert group is scheduled for the beginning or mid-September and will address the issues of **SAI openness and ensuring inclusiveness in emergency situations**.

If you have something to share on the topics and would like to **contribute to the work of the Group**, please send us your suggestions at scei@ach.gov.ru

SPEECHES AND PRESENTATIONS

Experience of SAI Russia in remote auditing: technological challenges and solutions

Mr. Denis Strizheusov, Deputy Director of the Financial Audit Department, Accounts Chamber of the Russian Federation

The **framework** we followed included **5 sections: hardware, connection, work process, virtual team, IT and safety**.

A number of challenges presented themselves with regard to **how to manage people, how to keep them motivated, safe and inclusive**, how to provide them with tools to facilitate home office.
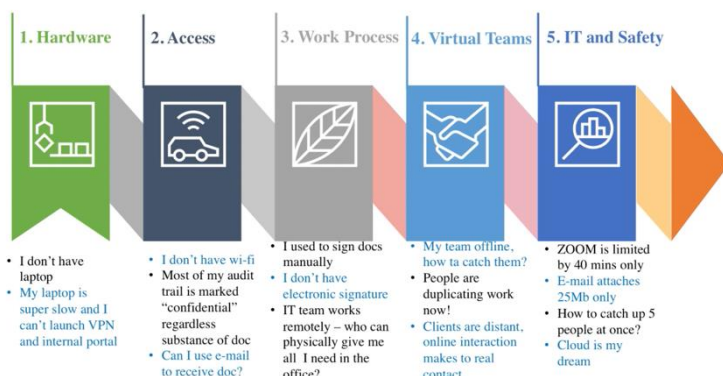
Remote audit is about achieving **high level of flexibility without any compromise to the audit objective**. That would mean that we need to do the same audit process, in the same way and get the same result, but we need to be remote. Our audit programs need to be **tailored considering their feasibility, confidentiality and security**.

Mr. Mikhail Petrov, Director of the Digital Transformation Department, Accounts Chamber of the Russian Federation

The **concept of digitalization** of the Accounts Chamber was developed 2 years ago in order to provide new technology and new remote working places to work with audit objects. But with the pandemic we had to move much faster than we were supposed to.

We deployed a **cluster of user workplace virtualization servers, created an internal cloud storage, enhanced email system, introduced two-factor authentication**, and a lot more.

In two or three months we accomplished all the work planned for the next year and resolved a lot of issues and problems that would have taken several years.

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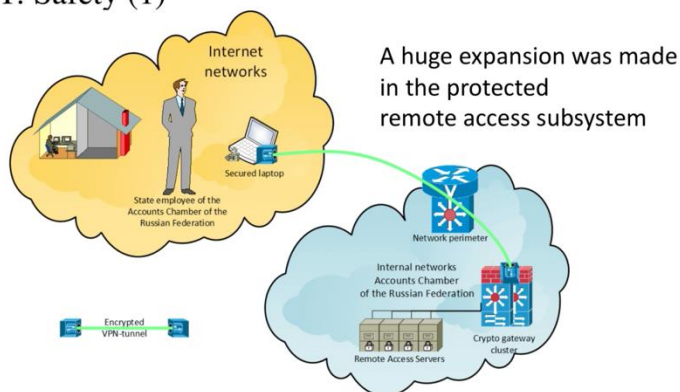
Now about 90% of our personnel can work from home using all our internal IT systems. Moreover, now we have **remote access to the IT infrastructure of audit objects**, including 60 information systems of 27 external organizations.

The presentation is available here

Remote auditing in the UK National Audit Office – safe and future ways of working

Mr. Daniel Lambauer, Executive Director for Strategy & Operations, UK National Audit Office

In line with the trend in digitization of the public sector, over the past few years UK NAO introduced **cloud-based infrastructure for more network resilience, implemented a new information security stance, provided all employees with the necessary hardware/ software** combination to work remotely. Flexible working policy was adopted around 5-6 years ago.

We worked with the bodies we audit **to phase-out the need to check physical paperwork** as part of our audits. Screen-sharing, remote data download validations, increased data analysis, etc. has allowed us to move towards a largely paper-less and digital audit process which proved to be the key enabler for remote auditing.

Auditing traditionally relies on contact with audited bodies. The main challenges we faced were **liaising with audit clients, doing remote audit work/testing, and ensuring productivity**.

However, like many other SAIs we were positively surprised by **how perceived obstacles can be overcome by adapting methods**, e.g. such as using webcams to check stocks. In practice we have been able to complete our audits with less work on-site than we traditionally thought.

One of the key lessons we have learned was that **more could be achieved through remote auditing that we would have thought**. We are thinking about the implications for our audit approach going forward.

Another lesson concerns the **importance of live employee engagement**. We used regular pulse surveys asking our colleagues to highlight any well-being and productivity issues, which gave us unprecedent live management information about areas our colleagues found difficult and allowed us to respond promptly with solutions.

Additional information can be found in the presentation script.

Audit from home: financial auditing during COVID-19 pandemic

Mr. Thopan Aji Pratama, Senior Auditor, the Audit Board of the Republic of Indonesia

The Audit Board of the Republic of Indonesia (BPK) was in the process of audit when the pandemic occurred, so we decided **to continue audit remotely using virtual platform**. **Technical Guideline on Financial Audit in Emergency Period** was issued. According to the Audit Strategy during the COVID-19 pandemic, the audit is conducted from home, virtually, though physical internal and external meetings can still be conducted for highly significant matters with implementing health protocol. Also, alterative working procedures can be considered and implemented.

Transition from normal to new normal **requires more digitalization and less paper**, and BPK had prepared the necessary infrastructure. Since 2011 **web-based application was developed to support all phases of the audit**, especially working papers documentation.

These apps also cover main features of the **risk-based audit and paperless working process**. During the COVID-19 outbreak all the apps are simultaneously accessed by all auditors and effectively help the auditor to finish their jobs.

In terms of **team management**, weekly progress reports, periodic internal and working-group meetings have been introduced. The audit team members share their location via applications and submit daily health reports to monitor their safety and health conditions.

Complete presentation can be accessed here.

Experience of SAI Peru in remote auditing: technological challenges and solutions

Mr. Fernando Ortega, Manager of Citizen Participation and Complains, General Comptroller's Office, Republic of Peru

Before the pandemic the innovation in auditing in SAI Peru was addressed towards trying to **adopt ICTs in order to improve audit process** and its application without considering the distance between people as a variable (so called e-audit). Thus, when we applied the **physical distance variable**, we got the concept of **remote audit**, which is performed off-site with the application of ICTs not only to contact or connect auditors with auditees, but also to gather information, to determine the extent of conformity to audit criteria.

The main macro processes of public management in Peru are **managed using the ICTs**, including financial management, public procurement, public infrastructure establishment, which are usually part of the scope in our audits and are now the main source of information for remote audits.

Back-office system was **prepared to upload massive information, a matrix report template was developed, and digital signature software was updated** in order to include all the team members' signatures in the documents. We executed **more than 1900 reports remotely, in less than 3 weeks with no more than 15 auditors**. All the audit process was completed online, completely paperless.
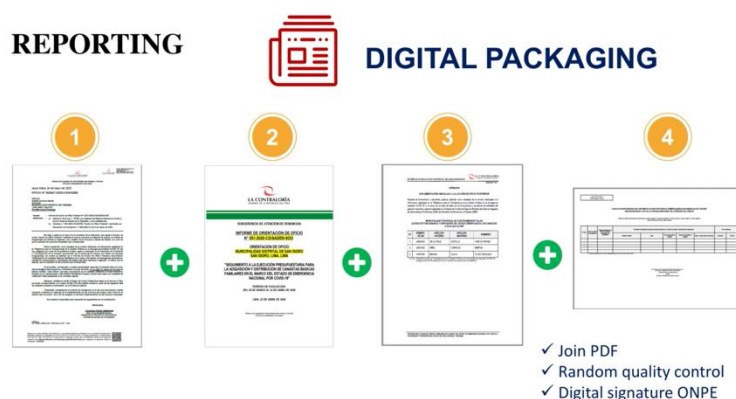
Due to **low costs** it was possible to issue reports to municipalities where we never before had arrived with control services. Moreover, remote audit fits naturally for continuous or simultaneous control models, in which procedures are aimed to identify risk opportunely.

The presentation is available here.

Experience of the French SAI in remote audit, technological advances, challenges and solutions

Mr. Xavier Bailly, Financial Magistrate, Court of Audit

The remote control in the context of COVID-19 pandemic is quite an original experience, since usually it concerns only the relationship between the comptroller and the controlled body. Here it also concerned the employees and the workplace, institution.

Pre-available resources of SAI France included **extensively distributed laptops, largely dematerialized working environment and a program for digital transformation launched a few years ago**. However, from the institutional point of view, those resources did not go as far **as only testing remote control**, we did not have any practice in e-monitoring and had not published any report according to these modalities.

The specific challenges faced during the pandemic included such questions as whether to continue the audits already started, which services had to be continued in person, etc. The switch-over to teleworking was so rapid and massive that infrastructure was overwhelmed. But **the main challenge was overall human**. Teleworking is not just about tools, it is also about **a particular position, a specific mindset**. Beyond the technical devices, these cultural aspects must not be neglected.

Among the most important points that played the role in finding the solutions was the overall posture of the institution, **the posture of permanent adaptation to a very evolving crisis**. The choice was made to continue the activity of the Court at all costs, but also to show that the institution was on the frontline to provide resources to the administration, to make sense in a moment of crisis.

Please consult the full version of the presentation.

US GAO's Experience Operating During the Covid-19 Pandemic

Mr. Karl Maschino, Chief Administrative Officer/Chief Financial Officer, United States Government Accountability Office

Our IT systems **had already been designed to enable telework**, almost 90% of our employees telework at some point during the year. So, when we asked everyone to telework at the same time, we were very pleased that our systems enabled that.
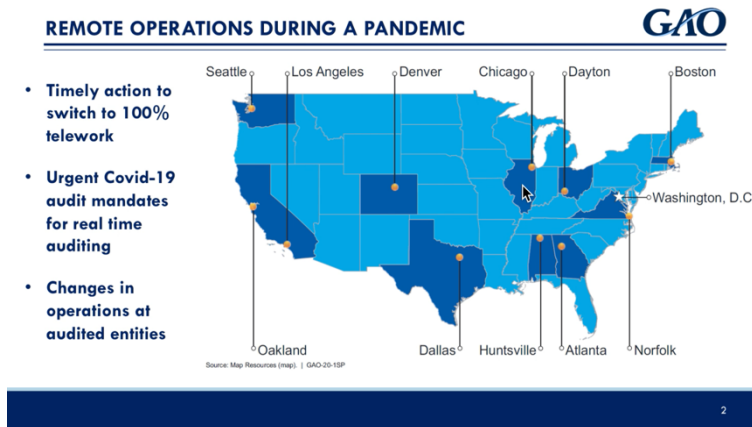
The first challenge was **overcoming reduced travel and social distancing**. The response strategies included reordering of engagement activities. In many cases we had to use the tools adopted by our auditees, and we were really flexible with that.

This transformation is really a lot about people, as opposed to anything else. Technology is certainly a challenge, but **if people in your organization are not able to operate for all kinds of other reasons, you are still not going to be effective**.

There were many things we needed to do to make our organization up and running, which included **frequent communication to employees** on behalf of the leadership, **adapting critical processes** such as training and hiring, providing them with necessary equipment and tools.

Additional information can be found in the [presentation](#).

OPINION SURVEY

In the course of the webinar the audience was invited to take part in a traditional **opinion survey** on the topic of the discussion. This time the participants were asked to define with one word or phrase **what turned out to be most challenging in the remote audit during the pandemic from the technological point of view**.


The results showed that **security was named as the most important challenge** by a majority of respondents, followed by issues of infrastructure and connection. In general, a closer look at the resulting word cloud allows to identify **several clusters** of answers.

Despite security matters raised numerously in different wording and an ample variety of **technical issues of communication and connection**, a separate group of answers represented concerns related to the **human factor,** including knowledge requirements and importance of team work, as well as preserving mental soundness and combating fatigue from constant use of new technologies.

Questions & Answers

The webinar session was characterized by **high involvement of the audience** and a great lot of questions sent to the chat of the translation. The total number reached 22 which was obviously impossible to cover during the event. Further you can find the replies of the speakers during the **panel discussion** part, as well as their kind responses **to follow-up Q&A emails**.
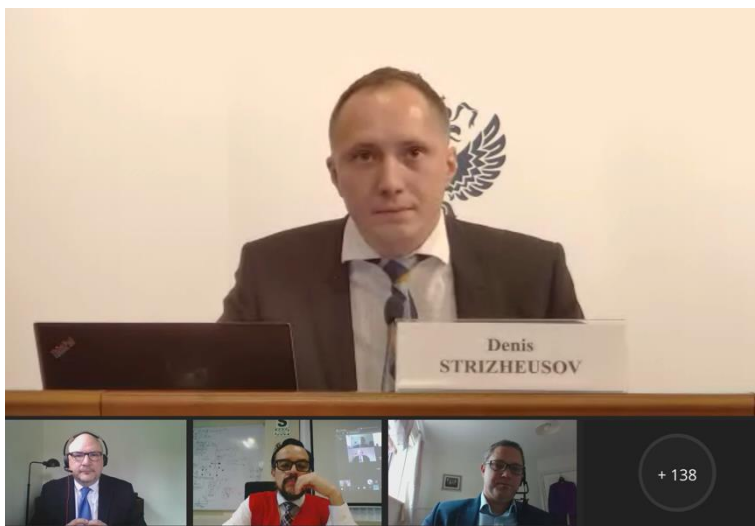
Regarding connecting to the information systems of external entities, does the audit staff have remote direct access to the entities' systems?

SAI Russia: We have access to our auditees' information systems with read-only rights. Even in international practice we are now working on getting access to the systems of our clients with special auditor rights.

UK NAO: We have access to the auditees systems through secure channels and downloading all the information into our systems.

SAI Peru: We have access to that information from auditees because hopefully systems are centralized, and it does not depend on the access to the internet from the institutions that we control. All the financial, procurement and infrastructure information is centralized and we have access from our offices to all these databases.

US GAO: For those agencies where we don't have direct access to raw data, for example, the agencies themselves have been able to create the document repository for us to get access to the documents.

How do we know that the document that we see in a soft copy is really original and can be accepted as an audit evidence?

SAI Russia: We definitely get the soft copies, but as a common practice, we have two options. One is documents that are signed electronically, so we have tools to read electronic signatures, so we ensure that the signature is valid, and we can accept it in the audit trail. And the second, is documents that we have during the audit, so me just make sure that the scans are accurate. That is a procedure that we do separately from the audit.

SAI Indonesia: Regarding the submission of digital documents the auditors consider their validity. The auditees are required to put a digital signature on the document, and if it is not possible, the auditor shall ask the officers to make a written statement that the documents are valid and same as the original versions.

UK NAO: Generally speaking, most of the ERP systems include all the relevant documentation scanned-in already, so for some time we don't do comparison to papers, but it does depend on the audit test of course.

Regarding the information security, how to protect information circulated in the Internet from hackers?

SAI Russia: We have two optional tools, one is VPN, and the other one is firewall. We also use password protection for the files we share.

Was any survey conducted by SAI Russia or the UK within the organization in order to understand the extent of remote auditing challenges and employee engagement.

SAI Russia: We have surveys for services, so in case we provide some internal service, we do a survey afterwards. In the pandemic situation, our HR department also started a channel in Telegram messenger application, with access for all employees only. It has a chat where everybody can speak up and share their thoughts and concerns, get IT support, hotline credentials, etc.

UK NAO: Yes, looking after employees is really important to us, so we wanted to understand from the very beginning how our employees are getting over, what support they need, what challenges. So almost from the very first week of the lockdown we

instituted a weekly pulse-survey using Microsoft forms, and it has been working really successful.

Is Technical guideline on financial audit in emergency period developed by SAI Indonesia available publicly on their web site?

SAI Indonesia: It is not available publicly, but if anyone wants to get the information, they can contact our public relations division at www.bpk.go.id.

Are there any risks to data privacy in using meeting apps like ZOOM, Microsoft Teams?

SAI Indonesia: There's always a risk when we use an application especially for online purposes, that's why we apply necessary procedures to make sure only the right people are in the meeting room. And given the obvious use of such applications, we develop our own meeting application.

How would you asses the risk of fraudulent activities in the remote auditing using ICT?

SAI Russia: ICT can really be a source of fraud risk. So, we have implemented special procedures involving, for instance, the staff of an auditee, in order to mitigate this risk and to ensure that only correct audit evidence is received.

SAI Peru: Due to that our procurement system being already based on ICT systems, it is possible to identify those risks remotely. We have some algorithms in our SAI to analyze information on those procurement processes which are managed by municipalities and other institutions that we control.

Does remote audit mean 100% remotely?

SAI Russia: It does not necessarily mean it. The remote concept was introduced not because of the pandemic. The way we understand it, is that we do some of the work remotely. And we refer to ISO in order to ensure that when we do remote work, we need to ensure that we implement the right procedures and do not compromise the audit objective.

What challenges were faced while conducting big data audit in the remote audit environment?

SAI Russia: First of all, data quality should be mentioned. It is a very important area that defines if we make correct conclusions or not. There should be people responsible for providing quality data.

UK NAO: The first point to make is that context is really important. Different SAIs had different starting points in their use of data analytics and big data when the COVID-19 pandemic arrived. The severity of the impact of COVID-19 has also varied in different countries. Over the past few years the UK NAO has been making 'big data' audit and data analytics a core part of our standard audit approach. We have invested in the technology - including a move to the cloud – and in recruiting and training staff with the skills to engage and support new ways of working. Of course, this investment was not made with a global pandemic in mind, but looking back we were fortunate to have been at a relatively good starting point when the COVID-19 pandemic forced the UK into lockdown.

The second point is that even though we had a good starting point we still had many challenges to overcome in remote auditing, including:

We already had an audit model where 'remote working' was a standard and important element. Moving to and supporting a 100 per cent 'working from home' model for all 850 UK NAO staff was a big change initiative.

The UK Government organisations we audit have also been going through a process of digitalisation over several years. Many of these organisations were also going through the shift to 'home working'. We had to work closely to understand the implications of the COVID-19 pandemic on their ability to engage with our audits and provide us the evidence we need. To do this on a case by case basis takes time, trust and a lot of communication.

This was all happening when some of the organisations we audit were responsible for leading the UK Government's response to the COVID-19 pandemic. As Gareth Davies, UK Comptroller & Auditor General and Head of the NAO said in his blog in April 2020, "...We must not get in the way of public servants working hard to save lives, but we must

also ensure that our reporting is sufficiently prompt to support proper accountability for public money...".

In addition to delivering our existing audit programme, making adjustments where necessary, we were also planning and starting to deliver a substantial new programme of audit work on the UK Government's response to the COVID-19 pandemic.

We were investing time working with other SAIs facing similar challenges through the INTOSAI SCEI Expert Group initiative, the INTOSAI PFAC initiative, and the EUROSAI Project Group on Auditing the response to COVID-19 (which we chair).

So, a lot was going on, and perhaps capacity was the biggest challenge in undertaking big data remote audits rather than anything technical. This work is undertaken remotely for the largest data-sets as the data is stored and processed in the cloud - meaning we already have a 'location agnostic' audit model. One of our biggest challenges was with 'medium sized' data, where our audit teams have become used to being able to move data between their laptops and our cloud storage solutions whenever they want. As covered in the presentation, people's individual circumstances meant their home internet connections can be unreliable, and there have been some minor issues with our cloud providers, leading to issues in data-transfer.

SAI Peru: In our experience, one of the main challenges we had to face was related to the professional competences of our team to use a large amount of data. We realized that in the field of auditing using Big Data, it is necessary to have a combination of knowledge, abilities, and experience in auditing, as well as in Big Data management.

Another challenge is the availability of hardware with enough capability to manage Big Data. At the beginning, we didn't realize how much information could be analyzed in an audit process. It would be a good idea to secure more hardware capability than what your actual estimation indicates, because during the execution of the audits, it is probable that new information requirements will appear.

How are SAIs applying artificial intelligence (AI) to help in the remote auditing process? What technologies are they using?

SAI Russia: There are some examples. Machine learning methods could help in finding "unusual", suspicious operations in the whole set of transactions, to link data tables from

different sources to identify full set of data describing some object, image recognition technologies could detect some signs of documents falsification.

UK NAO: Like many SAIs, and some INTOSAI working groups, we are interested in the potential for AI in the audit process generally and are keeping developments in this field under review. We do not currently make widespread use of AI as part of our standard financial audit approach. We are increasingly moving our data-analytics and data-engineering workflows into the cloud. For example, we are moving some of the data-intensive workflows from our auditors' individual laptops into optimised cloud applications and workflows, reducing the need to move large datasets around and streamlining the remote experience for our auditors.

What could you advise to help the underdeveloped countries to deal with law issues, because generally the laws don't allow remote audit?

SAI Russia: First of all, they might start working on collecting audit evidence remotely. For instance, if an auditee can sign data with digital signature it could be a good idea to start accepting it as an audit evidence.

SAI Indonesia: It depends on the constitution in the respective country. If the constitution allows to adopt an emergency law during emergency period, this may override the existing regulation, so that SAIs may search for an opportunity to overcome the provisions that prohibited the use of remote audit during emergency period.

UK NAO: This is a difficult question to give a general answer to as the accountability systems in different countries vary. So, the unhelpful answer is, 'it depends on your context'... A general observation is that the UK NAO has worked with many SAIs over the years as part of our technical cooperation programme. One of the first things we do is encourage SAIs to consider how they, the organisations they audit, and the legislative bodies they report 'interpret' the SAI's legislation and mandate. We then encourage SAIs to consider how they have translated this interpretation into their day to day audit approaches. In many cases SAIs conclude that although the legislation may not explicitly give them permission to do new things, it does not say they cannot.

In our experience, although not always easy, if there is a clear case to update legislation it can be updated – this has happened in many of the countries whose SAI we have worked with. It has also happened in the UK over the years.

Current legislation governing the work of the UK NAO gives Gareth Davies, our Comptroller & Auditor General and Head of the UK NAO, broad powers to certify the accounts of all government departments and many other public sector bodies. He also has statutory authority to examine and report to Parliament on whether departments and the bodies they fund have used their resources efficiently, effectively and with economy. Over the years we have developed many approaches to help us fulfil this mandate, some more successful than others, based on the changing nature of public audit and through consultation with our stakeholders. Paragraph 6 of the Moscow Declaration encourages all SAIs to, "...Have an experimental mindset to enhance innovation and development...".

Some countries have legislation which explicitly refers to the need for the SAI to conduct audits in line with international standards. Our experience also suggests that the challenges in remote auditing haven't been about complying with auditing standards, but rather from the practicalities of undertaking some audit tests remotely. For example, in the UK we conduct financial audits in compliance with the International Standards of Auditing (ISA). Even the standards for existence testing are quite permissive. For example, ISA 240.13 states that: "Unless the auditor has reason to believe the contrary, the auditor may accept records and documents as genuine. If conditions identified during the audit cause the auditor to believe that a document may not be authentic or that terms in a document have been modified but not disclosed to the auditor, the auditor shall investigate further. (Ref: Para. A9)." So, this was more about the practicalities of applying the standard, and adapting where necessary by using webcams to undertake this work for example. Another area we needed to consider was that in some cases the IT infrastructure of the organizations we audit is not as developed as ours, and as such there might be valid concerns about the secure transfer of data without going on-site. Again, this requires close collaboration with the organizations we audit to agree a robust remote solution.

SAI Peru: Usually, legislation wasn't developed considering remote auditing. To move towards remote auditing in this scenario, practitioners could consider a cost-benefit analysis, by which remote auditing clearly appears as the best option. It is worthwhile to invest some time in estimating the costs of both types of audits in order to compare their effectiveness.

Are there any guidelines/laws on IT for remote auditing developed by INTOSAI? If yes, where will it be available?

UK NAO: The UK NAO's approach to remote auditing is guided and governed by the Financial Reporting Council who issue interpretational guidance for applying the ISAs in the UK. Here is a link to their guidance relating to Covid-19.

How can you apply financial audit approach during COVID-19 for performance audit and compliance audit?

SAI Indonesia: To some extent, some remote audit procedures to gather audit evidences on financial audit during COVID-19 pandemic can be applied in performance audit as well as compliance audit, especially procedures that relates to IT optimization, such as virtual interview and virtual observation. However, given the differences between the three types of audit, I will suggest that SAI should also develop approach for both performance and compliance audit during covid-19 pandemic. For performance audit, for instance, SAI could consider how to decide the subject matter and how to develop criteria to be used in the audit in timely manner.

Could you clarify a bit more the difference between V-audit and R-audit?

SAI Peru: From our point of view, when we refer to e-audit or electronic audit, we are talking about the audit process assisted by ICT, specifically in the analysis of information, in the management of working papers or in the automatization of audit process. Thus, when we applied the physical distance variable, the remote audit concept appears, which is the audit performed offsite with the application of ICTs, not only to contact auditors with auditees but also to gather evidence (to determine the extent of conformity to the audit criteria).

In line with this, for us the virtual audit or v-audit would be a remote audit to which automated procedures are added. The virtual audit is a set of audit activities in which professionals interact with the information generated by the organizations under control, along with the auditees responsible for the generation of the that information.

Is the control intervention SAI Peru referred to part of the concurrent audit or a pre-audit stage?

SAI Peru: Before a remote audit (any kind), we perform procedures ("pre-audit") to reduce the control risks. These processes are run to validate the following three aspects:

- The suitability of the electronic or virtual procedures.
- The consistency of the evidence.
- The existence of an "adverse situation" (we call adverse to a situation included in the scope of the audit, that could be considered as a non-conformity).

The Concurrent Audit is a kind of preventive control or simultaneous audit that could be performed remotely or not. It is a kind of audit that, in some circumstances, and because it is dynamic, is suitable to applying distance procedures.

How do you gather information (audit evidence) from third parties in the process of remote auditing?

US GAO: GAO leverages a range of technology-based and non-technology methods to gather information from third parties in the COVID-19 environment. While there are no perfect substitutes for in-person methods, we have identified potential remote-access and virtual methodologies that can act as alternatives to in-person methodologies.

- Video-based interview, discussion groups and other small group methods. Converting planned interviews to videoconference meetings is another solution to travel and gathering restrictions.
- Additional requests of documents or photographs. In some situations in-person observations may be replaced with additional documentation of agency/program activities, policies, or procedures (e.g., training courses held with participant lists). Photographs taken by agencies or other outside entities of their activities could also be requested.
- Request administrative data. When responding to research objectives that would typically require in-person evidence collection, we consider other data sources, including electronic data files from agencies and/or programs under review as well as other third party sources.
- Collect data using a survey or other self-administered instrument. It may be possible for questions that might otherwise be administered through in-person

interviews or discussion groups to be reformatted and administered using a web-based or emailed questionnaire.

To retrieve documents/information/data we have leveraged several mechanisms.

- File transfer and secure file transfer. Many agencies leverage standard internet protocol for transmitting files between computers following best practices.
- Virtual Data rooms. Technology that enables the uploading, storing and sharing of information between two or more relevant parties.
- E-mail. When appropriate certain types of information can be transmitted via e-mail.
- Hand delivery. Agency staff may safely drop off information or GAO staff may follow safe social distancing practices to retrieve data from an agency.