

To: The Covid-19 Vaccine Certification Committee. UK Parliament.

29<sup>th</sup> April 2021

Dear Committee Members,

We are responding to the request for evidence issued by yourselves in your Covid-19 Vaccine Certification enquiry.

We are members of an electronic identity (eID) forum working on a proposal for an eID interoperability standard. Our work has already been presented<sup>1</sup> and demonstrated<sup>2</sup> to the European Central Bank, European Payments Council and (Berlin Group) Open Banking<sup>3</sup> forum, and in several eID related meetings, workshops and conferences. Our focus is on privacy, security and offline availability.

As regards Covid-19 Vaccine Certification, we recognise two different categories of requirement.

Firstly, there is a need to provide a workable solution by summer 2021, to facilitate the restart of international travel. The European eHealth Network<sup>4</sup> has recently issued (on 21<sup>st</sup> April 2021) its "Guidelines on Technical Specifications for Digital Green Certificates Volume 4"<sup>5</sup>. This approach involves the verifier scanning a QR code (either on paper or displayed by an app). In addition to Covid status data, the QR code contains (unencrypted) personal details including name and date of birth. The verifier scans the QR code and must then manually check the holder's ID or passport to validate identity (& prevent impersonation). In the UK, we recognise that the Covid contact tracing app could be enhanced to implement this or a similar approach. The holder would present their certificate (paper or via the contact tracing app) in conjunction with their passport.

Secondly, there is potentially a need for people to present their Covid-19 certification to gain access to sports stadiums, entertainment venues and pubs/restaurants. We note the recent cross-sport letter on covid certification for fans, sent to the Prime Minister and others (8<sup>th</sup> April 2021)<sup>6</sup>. In this letter, the Premier League and others stress the need for an approach which must not be discriminatory and should protect privacy.

In our opinion, the approach adopted for international travel is not appropriate to these other use cases. The idea of having to share your name and date of birth to enter a venue along with presenting your ID/passport will not be deemed acceptable to the majority. In the UK there is no obligation to possess or carry photo ID.

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<sup>1</sup> EPC Public Consultation. See use case C2B-5. <https://www.europeanpaymentscouncil.eu/document-library/guidance-documents/public-consultation-document-new-msct-use-cases-and>

<sup>2</sup> Point of sale demonstration [https://www.quali-sign.com/resources\\_demonstration\\_evaluation.html#posPayment](https://www.quali-sign.com/resources_demonstration_evaluation.html#posPayment)

<sup>3</sup> The Berlin Group NextGenPSD2 Signed Payment Request change request [[https://www.quali-sign.com/documents/bg/20201118-NextGenPSD2\\_ChangeRequestForm-SPR.pdf](https://www.quali-sign.com/documents/bg/20201118-NextGenPSD2_ChangeRequestForm-SPR.pdf), [https://www.quali-sign.com/documents/bg/CR\\_SignedPaymentRequest\\_20201113.pdf](https://www.quali-sign.com/documents/bg/CR_SignedPaymentRequest_20201113.pdf)]

<sup>4</sup> [https://ec.europa.eu/health/ehealth/covid-19\\_en](https://ec.europa.eu/health/ehealth/covid-19_en)

<sup>5</sup> [https://ec.europa.eu/health/sites/health/files/ehealth/docs/digital-green-certificates\\_v4\\_en.pdf](https://ec.europa.eu/health/sites/health/files/ehealth/docs/digital-green-certificates_v4_en.pdf)

<sup>6</sup> <https://www.premierleague.com/news/2097493>

Our recommendation is to adopt an alternative approach based upon a digital identity and attributes trust framework<sup>7</sup>, as is currently being proposed by the UK government. This approach would eliminate the need for the sharing of any personal data or the presentation of photo ID (e.g., a passport).

By adopting an eID trust framework approach, a venue (e.g., sports stadium) will obtain electronic confirmation from a trusted authority (e.g., the NHS) of a COVID status uniquely bound to the person presenting it. This can be achieved by the person touching the fingerprint sensor on their smartphone when presenting their COVID status attribute. Because the venue trusts the NHS, it does not need to know any further information about the person. Indeed, in order to allow the person through a turnstile into the venue, all it needs to know is:

- The person's Covid status allows them to enter the venue (YES/NO).
- That the NHS (or another trusted authority) is the direct issuer of the COVID status.
- And that this confirmed COVID status is indeed uniquely related to the person presenting it, a process known as Strong Customer Authentication (SCA).

The use of an eID trust framework also offers the possibility of having additional attributes presented as required. For example, the person's digital ticket to the event can be presented at the same time as their Covid status and validated by the same single touch of the fingerprint sensor.

However, an eID trust framework comes with rules which must be followed by all parties. The framework establishes an open level playing field for multiple eID app vendors, identity and attribute providers and relying parties to coexist in harmony. Only those participants (e.g., the stadium) who obey the rules can exchange eID credentials. Also, it would be inappropriate and against the rules if, for example, the NHS were to issue attributes to a single eID app vendor. This would give the vendor an unfair competitive advantage. An eID trust framework is required to define a set of interoperability standards, which for example will allow any turnstile (or terminal) to interact with eID apps issued by any vendor.

In our opinion, it is also vital for the eID procedure to support offline operation. It is not possible to guarantee that every smartphone passing through the turnstile is connected to the internet. To add resilience, the approach should also enable the terminal (or turnstile) to continue operation in the absence of network signal or mains power.

We are in a position to demonstrate a Covid-19 certification procedure applicable to sports and entertainment venues today. Our approach is based upon mature technologies and is aligned to major eID initiatives. It uses eIDAS electronic signature standards and SCA to enable a person to present their own eID attributes, using a smartphone app. It is also

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<sup>7</sup> <https://www.gov.uk/government/publications/the-uk-digital-identity-and-attributes-trust-framework/the-uk-digital-identity-and-attributes-trust-framework>

applicable to numerous additional eID use cases, including payments, digital currencies <sup>8</sup>, eKYC<sup>9</sup> and also COVID-19 certification.

The table below provides a comparison of the two approaches.

	Our Proposed Approach	eHealth Network
Presents only Covid status info (no other personal data).	Y	N
No additional (photo) ID/passport verification required.	Y	N
The eID procedure can be performed offline (no network).	Y	Y

We would very much welcome the opportunity to discuss/demonstrate our approach. Please don't hesitate to contact us to discuss this further.

Kind regards,

Michael Adams, Luca Boldrin, Petros Kavassalis, Stephane Mouy, Ralf Ohlhausen, Eric Wagner.

About the authors/signatories.

**Michael Adams** is the founder of Quali-Sign Ltd, located in Cheshire, UK. Quali-Sign is a mobile app specialist in electronic identification (eID), payment authorisation and the capture of strong customer authentication (SCA). Michael's background includes 10 years at IBM followed by 8 years at Barclays Bank. In 2014, Michael founded Quali-Sign to develop a mobile payments approval app, suitable for the corporate marketplace, meeting PSD2 requirements. The SCA proof takes the form of an eIDAS Advanced Electronic Signature (AdES). In recent years, Michael has participated in the UK and Berlin Group Open Banking forums and EU/UK forums on Electronic Identification (eID). Michael has recently provided consultancy to the European eIDAS enabled i-Banking project. This included the creation of a demo covering the eKYC remote bank account opening use case. Michael has also built an eID demo covering the Covid sports event scenario, as described in this letter. Contact via [michael\\_adams@quali-sign.com](mailto:michael_adams@quali-sign.com).

**Luca Boldrin, PhD**, presently investigates innovation trends and manages research initiatives for InfoCert, the largest EU qualified trust service provider. His core competences are on trust services, identity management, distributed ledgers, security. He has been involved as a subject expert in many digital transformation projects, both at national and international levels, and regularly takes part in standardization initiatives in his areas of expertise. He is a member of the EU Blockchain Observatory expert group.

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<sup>8</sup> Link to paper "An integrated approach for Electronic Identification and Central Bank Digital Currencies" [https://www.quali-sign.com/documents/integrated\\_cbdc\\_eid-21-02-07\\_draft\\_pending\\_publication.pdf](https://www.quali-sign.com/documents/integrated_cbdc_eid-21-02-07_draft_pending_publication.pdf)

<sup>9</sup> Remote bank account opening demonstration [https://www.quali-sign.com/resources\\_demonstration\\_evaluation.html#openBankAcct](https://www.quali-sign.com/resources_demonstration_evaluation.html#openBankAcct)

**Petros Kavassalis** is an Associate Professor with the University of the Aegean (Dpt. of Financial and Management Engineering – Information Management Lab, i4M Lab). Petros Kavassalis holds a degree in Civil Engineering from the National Technical University of Athens (NTUA) and a Ph.D. from Dauphine University in Paris (Economics and Management) - doctoral programme in collaboration with Ecole polytechnique, Centre de Recherche en Gestion (GRG). In the past, he worked as a Researcher at the Ecole Polytechnique, Paris (Centre de Recherche en Gestion), at MIT (Research Program on Communication Policy – now part of SSRC), where he has contributed to the foundation of the MIT Internet Telecommunications Convergence Consortium MIT-ITC, and at ICS-Forth, Greece. His interests focus on the fields of Information Management, e-Identity and Privacy Management in Federated and Self-Sovereign Environments, Blockchain and Decentralized Systems, Business Process Modelling and Automation, Document Engineering, Communications Policy, Organization of the Digital Economies, Economics and Policy of Industrial and Technical Change. In the last years, Kavassalis' research focuses in particular on the application of e-services and software that enable private and public organizations to explore the potential of advanced identity management technologies and the secure environment established by the eIDAS Regulation.

**Stephane Mouy** is the founder of SGM Consulting, a digital transition consultancy focusing on electronic trust services and eKYC processes for the financial services sector. He worked as an in-house attorney for BNP Paribas until 2018, a bank with one of the largest retail banking networks in continental Europe, on electronic money schemes and on data protection/GDPR compliance as well as on several digital identity and remote onboarding initiatives for retail services. He is now part of the ETSI task force 588 preparing technical specifications for remote identity-proofing processes for trust services and advises the European Commission on various digital transition topics for the financial sector, with a strong focus on fraud-prevention and anti-money laundering processes.

**Ralf Ohlhausen** is the founder of PayPractice advising Payment Service Providers, notably PPRO and Tink, with a focus on PSD2 and Open Banking opportunities. Previously, he was Chief Strategy Officer at PPRO and President Europe for SafetyPay. Prior to that, he spent 10 years each in mobile telecoms and the IT industry. Ralf is chair of the European TPP Association (ETPPA), co-chair of the Berlin Group's NextGenPSD2 Advisory Board, member of the ECB's Market Infrastructure Board and previously Euro Retail Payments Board (ERPB), as well as a member of various ERPB and EPC multi-stakeholder groups representing the interests of fintechs and TPPs.

**Mag. Dr. Eric Wagner** is product owner of compliance advanced analytics platform and services at an Austrian Banking Group. In that role, he is responsible for building a big data and machine learning platform, lifecycle management and governance for Compliance - currently focused on anti-money laundering. Furthermore, he is engaged in numerous international, European and national expert and working groups covering financial crime, electronic identity and KYC, advanced analytics and technologies such as big data, artificial intelligence/machine learning, network analytics, natural language processing, distributed ledger technologies and quantum computing.