

White Paper on CAPS for PSD2

A White Paper on draft suggestions for the practical realisation of TPP access as described in the revised Payment Services Directive (PSD2) by adopting an open, optional Controlled Access to Payment Services (CAPS) methodology.

created by Equens SE, Nets and VocaLink

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Abstract

The authors VocaLink, Nets and Equens, which are all payments processors, endorse the intent behind PSD2 to drive future innovation in payments, and they promote the development of an optional open framework for Controlled Access to Payment Services (CAPS) to support adoption of the Account Information and Payment Initiation services as described in the PSD2. CAPS consist of three layers: 1) A PSD2 Compliance Layer which ensures basic conformance to PSD2 implementation, 2) an optional but contracted CAPS Framework layer with a range of services for managing authentication, liability controls, quality of service, dispute management and mobility, and 3) A CAPS Plus layer which enables a standardised access to additional services beyond the scope of PSD2. The authors argue that there are benefits for all actors in account based payments (End-user, Merchants, TPPs and AS PSPs) by creating a framework which will avoid fragmentation, and build trust in the new Payment Initiation and Account Information services proposed in the PSD2. The CAPS framework is an optional toolbox service which could form a key role in the adoption of account and payment services, promoting competition and innovation for these services within the EU. The concept is open and thus this paper calls for others to participate in the promotion of CAPS.

Preamble

We, the author companies of this CAPS white paper, have the firm belief that the regulatory intent behind PSD2 of opening up banks for information and payment services to third parties, if adopted correctly, will be a critical step in driving future innovation. It has been proven in several other industries that Open Innovation - leveraging the creativity of the non-incumbent developers - can be of great benefit to end-users, merchants, developers, service providers and the incumbent players. We wholeheartedly endorse this approach and wish to contribute to the debate with our combined industry experience of how the implementation of PSD2 may be realised in a safe, secure, open and fair way.

PSD2 stipulates the introduction of Payment Initiation (PI) and Account Information (AI) services by Third Party Payment (TPP) providers. These services can be the basis of Open Innovation, which, in future scenarios may lead to additional, but optional, services beyond those regulated by PSD2. The finalised PSD2 text poses a number of challenges that need to be considered and clarified during the EBA's consultation period.

In brief, these challenges are:

- For PSD2 to be a success it must be embraced and adopted by the market to foster and promote innovation and competition. In reality this must be underpinned by simple, modern and flexible API infrastructure and authentication methods.
- To avoid each of the ca 7000 banks in Europe creating divergent implementations of the PSD2 there has to be a level of harmonisation in the basic standards and principles of PI and AI services.
- Rapid growth in the TPP market driven by the open access could create a 'fragmentation effect' resulting in a difficult and complicated connectivity and reach challenge. An open network of aggregators, such as CAPS, should emerge in the market, allowing consolidated connectivity.
- To promote future innovation we believe that optional services beyond those regulated under PSD2 should be encouraged.
- Disputes over PI-and AI-services are inevitable, so it is in the interests of end-users, merchants, TPPs and Account Servicing Payments Service Providers (AS PSPs) to have standardised dispute resolution processes, driven by agreements on liability and authentication. We believe that some TPPs would welcome further clarity and certainty of service.
- A standard 'toolbox' of services for emerging TPPs could form a key role in the adoption of account access services. This standard offering will enable TPPs to focus on the development of their core business, removing many of the barriers to entry. Sourcing of technical solutions should be permitted to ease adoption, and indeed encouraged to promote competition and innovation.
- Our white paper describes a full set of suggested principles and functions which provide advantages to all stakeholders – a summary is found in the CAPS Benefits Table in Appendix 1.

We believe that the above principles will encourage the practical, safe and open realisation of PSD2 and wish to submit this White Paper for discussion to all those interested in making PSD2 a success. This includes in particular the EBA Authority which may wish to consider some of the above principles for inclusion in the forthcoming Regulatory Technical Standards - or at least ensuring boundary conditions that the above principles can be taken up voluntarily by the industry.

Controlled Access to Payment-related Services (CAPS): A group of services to support end-user access via third parties to payments and other related services.

The CAPS services have been conceived to facilitate legislative compliance and optional enhancements towards safe, secure and non-discriminatory access by Third Party Payment Service Providers (TPPs) to payment services provided by AS PSPs. Accordingly, CAPS would crucially help to support the legislative intent behind PSD2 by creating a level playing field for existing and new market players and thus fostering competition and innovation. CAPS would furthermore provide a solution to some of the practical issues that PSD2 is expected to entail, particularly regarding reach, security, authentication and liability. It would also actively support new entrants with new business models¹ to enter the market and develop compelling services to consumers.

CAPS participation layers

The CAPS service consists of three levels of participation: the PSD2 compliance service; CAPS framework; and CAPS plus.

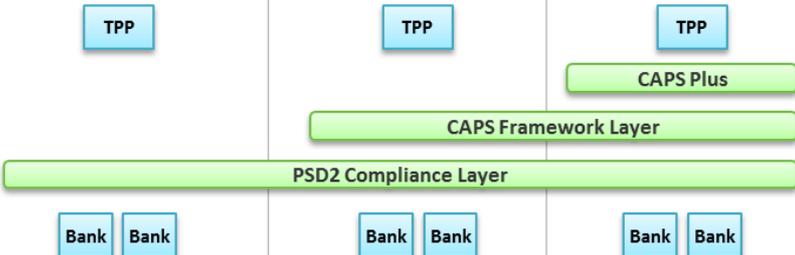
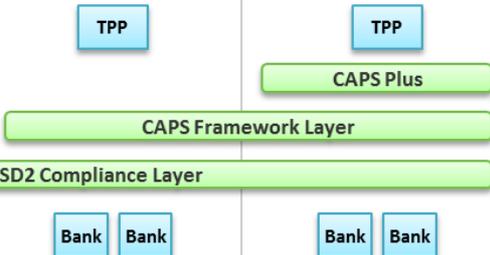
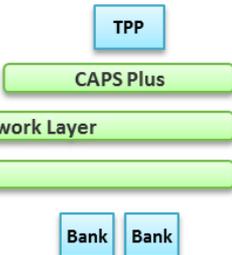
	No CAPS	PSD2 Compliance Layer	CAPS Framework	CAPS Plus
TPP to Bank relationship	Basic PSD2: TPP connects to each bank individually	TPP can connect to many banks with one standard interface (APIs)	Additional guaranteed quality of service	Additional value-added services
				
Pro	Basic PSD2 compatibility	Easy for TPP to reach any bank. Alignment on RTS interpretations	Everybody can rely on high-quality trust services such as guarantees, security, timing, anti-fraud and support	Access to services beyond PSD2: bank-verified age/postal address/identity, account services etc.
Con	Complexity in connecting many TPPs with ~7000 banks in Europe	Only basic functionality/ service	Requires agreement on rules	TPPs must adapt to services which are not standardised across banks

Figure 1: CAPS introduces a PSD2 Compliance Layer, a CAPS Framework Layer and an optional layer for CAPS service providers' additional value added services in competition with each other.

The PSD2 Compliance Layer is the first level of service in CAPS. It will provide a centralised connectivity solution for any TPP and AS PSP creating a standardised service, thus reducing or removing the need for multiple connections. This Layer will be created to wholly conform to the functionality and rules defined in PSD2. This provides a level playing field for all market actors: helping the AS PSPs fulfil their requirements in PSD2; and, to offer new and existing TPPs the access required to foster new and innovative services for the benefit of end-users. In line with PSD2, there will be no contractual obligations for TPPs in the compliance

¹ no business models will be explored here, CAPS does not endorse any particular business model and no business models are explored or proposed in CAPS but are left to the open market.

layer. It is reasonably assumed that AS PSPs could use the compliance layer to fulfil their access requirements in PSD2, however this in no way restricts AS PSPs and TPPs having their own additional arrangements if desired.

The next level of service, the CAPS Framework Layer, will require TPPs to sign up to a standardised framework that will look to build on the rules mandated in PSD2 and add further detail. The clearly defined business and operational rules defined in the Framework will help to promote a better service and create more consumer confidence. The Framework will cover aspects such as governance (SLAs etc.), authentication, liability and onboarding processes, these aspects are explored further in this paper. The Framework will be designed such that it is open to, and promotes the participation of, all reasonable TPPs, the only pre-requisite being adherence to PSD2.

The CAPS Plus layer includes additional services beyond those mandated in PSD2 that will help to drive innovation. We believe that access to these services will be very valuable to TPPs and allow a much broader scope for new services such as wider access beyond payment accounts, age verification and address verification. CAPS Plus services may not be standardised across all AS PSPs, individual AS PSPs may choose to offer different levels of additional services.

CAPS Objectives

The main objective of this document is to support, formalise and promote the CAPS service layers in order to help facilitate European interoperability between the systems of AS PSPs and TPPs as intended by PSD2. The end goal is full reachability through an open network of service providers adhering to the CAPS concept and services.

This White Paper discusses the technical and operational guidelines that should be followed for the CAPS services to function smoothly. There are significant benefits for end-users as CAPS will foster new innovation and market entrants through safe and secure pan-European access.

It is essential that everyone is free to join, provided they at least comply with the requirements of PSD2. CAPS is not exclusive and does not prevent any market player from doing a proprietary implementation of PSD2 compliance as an addition to, or alternative, to CAPS.

If all market actors chose to embrace CAPS, the implementation (chosen by the joint governance) will be operated by CAPS service providers that will provide:

- a controlled service and network to ensure consistency and structure for new services
- a robust authentication and credentials approach, integrated with appropriate liability allocation and a differentiated Quality of Service for different actors
- standardised liability dispute management processes, and
- TPP mobility² between CAPS services

² i.e. that TPPs can easily utilise multiple CAPS providers, as each CAPS service provider has the same policies, basic interfaces and processes through the PSD2 compliance layer. CAPS providers will compete on level of service, reach, functionality and other business criteria.

The governance introduced by the CAPS Framework will be created in an open manner meaning that it can be replicated across Europe by any skilled payments service providers. The framework may also be implemented by individual AS PSPs that choose not to join a CAPS service.

There are a number of governance aspects that need to be considered based on the account accessibility mandated under PSD2. It is envisaged that many of these aspects will be covered in the Regulatory Technical Standards that will be built in to the Compliance Layer. The following sections detail how the CAPS Framework would enhance this. At this stage the development of Regulatory Technical Standards has not started so these elements will evolve as necessary.

Credentials and authentication

There is a large divergence across Europe in the approach to trust frameworks that govern the use of credentials and types of authentication. However, these trust frameworks are all underpinned by a few core methods. The CAPS framework will integrate numerous approaches to trust frameworks to ensure that participants have maximum flexibility to offer to service users.

The PSD2 mandates strong customer authentication, it should be clear that the service is authorised by the end-user, who the beneficiary of the authorised payment is, and what the payment amount is. Ultimately, the trust frameworks implemented need to reach a balance between usability for end-users and an appropriate level of security.

Additional consideration needs to be given to understand:

- a pragmatic, risk based authentication process should be included, for instance differentiating between account information services and payment initiation services.
- modern authentication methods should be permitted, including the use of tokens and Open Authentication (OAuth)

The objective must be to make solutions that are both flexible enough to cater well for new technology and yet meet appropriate levels of security. A central service that monitors the network in more detail than the Regulatory Technical Standards and guidelines can enhance fraud protection and provide a standardised authentication services for TPPs.

Existing players have made inevitable investments in their current approach and therefore want to persist with these methods, likely giving rise to disputes about which approach is adopted. Even where the parties agree on the standards and approach, getting parties integrated so their systems work together, and keeping them aligned through subsequent system changes, can be a challenge. When focusing on the ultimate goal of pan European interoperability the authentication methods and credentials are a key driving factor to ensure alignment.

As a result of the sharing of internet banking credentials being part of the PSD2, the AS PSP's customer terms and conditions most likely need to be reviewed. Inevitably, a risk based approach dictates that they could be subject to greater scrutiny on Payment Initiation, and require robust liability and dispute resolution processes, greater controls of volumes and values, and appropriate risk underwriting structures.

It is expected that the AS PSPs will be responsible for most of the liability in PSD2, whilst this may seem preferential to TPPs this could also limit the flexibility of authentication methods that will be permitted. The

CAPS Framework will have several liability models that will give the TPPs an option to accept more liability, but gain more control of the authentication process. The purpose of this is to give end-users the best experience.

Liability and dispute handling

PSD2 makes it clear that consumers will be entitled to immediate reimbursement from the AS PSPs who have to then pursue the TPP. As there is no contract required this process could be very difficult as there may be several reasons for a dispute: the payment may not be properly authorised; or, the end-user may be fraudulent or even just not remembering a recent purchase! In practice, a need arises for a fast, simple, reliable and efficient settlement of disputes. Without this, the trust in TPP access to payment services will be undermined.

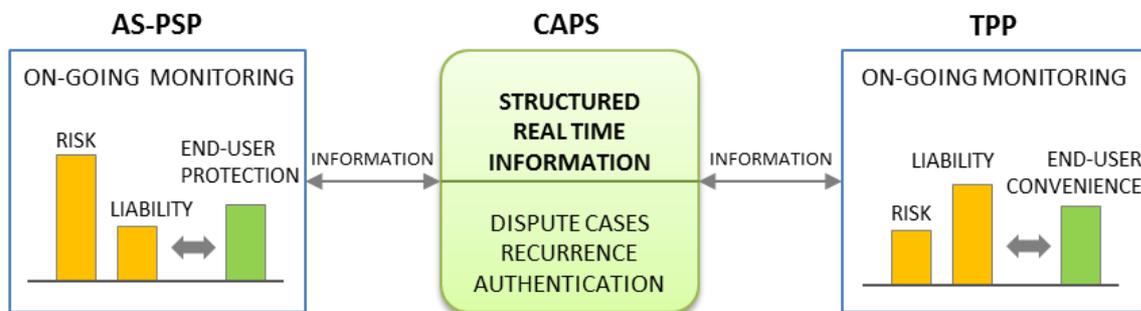


Figure 2: Both AS PSPs and TPPs will need tools to support the on-going monitoring of risk and quantification of potential outstanding liabilities. In the illustration above, a AS PSP faces a high risk if multiple TPPs are unable to cover their liabilities. TPPs may face similar high risk across multiple AS PSPs. As the number of participants taking part in TPP access services increase, the complexity of such monitoring will be a burden unless processes are standardised and automated as proposed by CAPS.

What is needed, in order to comply with PSD2, is an approach that provides a technical capability to facilitate easy monitoring of risk and potential liabilities, including dispute resolution mechanisms to allow the escalation of contentious issues. CAPS can help support this by providing a neutral and structured process for the AS PSP and TPP to communicate and reach a settlement of the dispute. This process will:

- have a low cost, defined and agreed, dispute resolution process. This process can appropriately feed into rule changes to reflect new liability use cases to the benefit of all participants
- be able to support TPPs in case of unreasonable claims for reimbursement by AS PSPs
- include a method for AS PSPs and TPPs to exchange funds in case of a financial settlement
- cooperate with local competent authorities in the suspension of participant access where regulations have been breached

The growing adoption and use of real-time payment infrastructures must be coupled with developments in existing fraud monitoring and protection systems. CAPS fraud monitoring will run in conjunction with and aim to bolster where appropriate, the current and future processes used by merchants, TPPs and AS PSPs.

Following the establishment of CAPS, further investigation will be done with all actors to determine how fraud protection can be enhanced. A CAPS service provider can provide a central view across all connected AS PSPs and TPPs giving significant benefits for fraud management and potentially also for detection.

Participation and on-boarding

Access to the CAPS Framework layer will require all participants to go through a simple yet robust on-boarding process when joining the service. This process will ensure that all participants adhere to a set of fair, reasonable and non-discriminatory minimum requirements. The criteria for joining CAPS will be jointly developed in multi-stakeholder consultation and specified in the Framework to gain CAPS participation (and a digital CAPS certificate is issued, allowing real-time monitoring and control).

It is important that the on-boarding process does not preclude any participant from accessing CAPS, but merely ensures that they meet the defined minimum requirements which are essential to increase trust between participants.

The on-boarding and certification process is run completely independently and in addition to any registration process controlled by the local financial conduct authorities as specified in PSD2.

The CAPS certification process will create an enhanced level of trust between participants as access can be suspended, in cooperation with competent local authorities, should the participants face operational attacks, repeating breaches of rules, and confirmed actions of fraud. Furthermore, it provides a structured resolution process of any operational and compliance issues and conflicts. To further this point, a networked infrastructure can detect and suggest options for reaction, better than parties acting individually, thus preventing the loss of valuable time and assets.

Mobility and Interoperability

The ultimate goal of CAPS is a pan-European interoperability model, which will connect TPPs and AS PSPs in a common trust framework, allowing participants pan-European wide access with a single integration. Instead of each TPP trying to access accounts individually for each of the 7000 banks in Europe, a standardised interface is proposed that makes connectivity simple for TPPs.

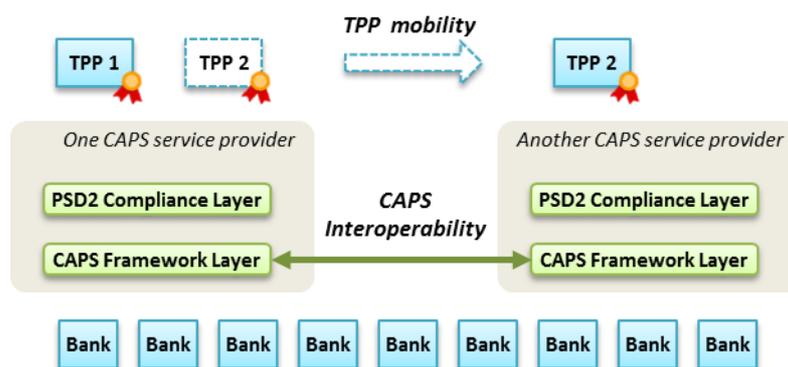


Figure 3: The PSD2 Compliance Layer enables easy mobility for TPPs wishing to connect to another CAPS service provider. The CAPS Framework Layer will enable interoperability for TPPs that operate in multiple market segments.

A pragmatic stepwise approach to the implementation of interoperability will be adopted:

Step 1 – Framework implementation – CAPS service providers begin with individual implementations but work together to form the basic framework and agreements that will see a commonality between services.

Step 2 – On boarding mobility – CAPS service providers continue to operate independently but recognise other CAPS service providers certification of both TPP and AS PSP participants, thus enabling TPPs to increase reach quickly and easily via connection to multiple CAPS service providers.

Step 3 – Interoperability – CAPS service providers begin to route transactions via each other, creating a single point of entry thereby removing the requirements for multiple integrations for participants that operate in many geographies or market segments.

Governance

The CAPS Framework will be defined in terms of a Rule Book, created according to open and objective criteria, jointly developed with other stakeholders, covering the following aspects:

- Vision and objectives of the CAPS service
- Scope of the CAPS service
- Roles of actors in the CAPS service
- Business and operational rules, including payment and account-related processes, dispute processes and data and API standards
- Rights and obligations of participants, including participation on-boarding processes
- CAPS Service management and governance model

The governance structure will also be determined in an open, inclusive process to ensure the continued progression of CAPS as the market, technology and regulatory environment evolve.

Summary of the Benefits of CAPS

The creation of an accessible, stable and forward thinking CAPS solution will bring a number of key benefits to the market:

- Streamline interaction between TPPs and AS PSPs
- Provide a level playing field for core elements of account access
- Promote easier access for new entrant TPPs
- Assist existing TPPs to conform to PSD2 and enter new territories
- Help AS PSPs to fulfil their regulatory obligations
- Standardise messaging formats and promote minimum service levels
- Creation of an 'opt in' framework clearly defining business rules and governance
- Baseline service to manage end-users expectations

Conclusion and Call for action

Equens, Nets and Vocalink have collaborated to produce this white paper, providing our best assessment of how to make TPP access to payment services work securely on a large scale. We worked together to develop the basic ideas behind CAPS into practical solutions which facilitate widespread secure and non-discriminatory access to payment services as required by PSD2.

The next step will be to discuss this white paper with the wider industry, the EBA and other regulators, as input for the further development of the PSD2 Regulatory Technical Standards. All three organisations will continue to develop further detail on the CAPS framework and its services.

Again, as stated multiple times in the text, we wish to emphasise that this CAPS concept, its governance, its implementation and its services are in no way limited to the ACH processors of this White Paper. This is not limited to bank service providers at all, but is explicitly open to free competition from any party willing to endorse the common vision of a high quality and secure trust framework. In fact, further partners are explicitly welcome.

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Equens, Nets and Vocalink are all European payments processors.

All three companies have participated actively in the "Open Transaction Alliance" (OTA), which is a cross-industry initiative of payment practitioners including banks, payment service providers, account information providers, payments processors, merchant and consumer groups, and other stakeholders in the European payments ecosystem.

Appendix 1 – Benefits and features of the CAPS participation layers

	PSD2 Compliance Layer	CAPS Framework	CAPS Plus
TPP to Bank relationship	TPP can connect to many banks with one standard interface (APIs)	Additional guaranteed quality of service	Additional value-added services
Banks and TPPs have aligned updates to PSD2 compliance	•	•	•
TPP can access many banks with one interface	•	•	•
Since easier to set up TPP, better services for users	•	•	•
Reduce European fragmentation	•	•	•
TPPs share cost and burden of regulatory requirements	•	•	•
Banks share cost of compliance	•	•	•
Guaranteed SLA/QoS for TPPs, merchants and governments	-	•	•
Harmonised dispute handling for users, TPPs, banks, merchants and governments	-	•	•
TPPs can get own secure auth across banks without own effort	-	•	•
Cross- bank improved fraud detection	-	•	•
TPP participants can push for new CAPS framework features	-	•	•
Users, merchants and governments benefits from additional services – e.g. get validated postal addr, phone no, email, age etc	-	-	•
Benefits for regulators and Europe : Better and innovative services, more quality, security and trust, less fragmentation and fraud, and more competition			