The Berlin Group’s Signed Payment Request (SPR) proposal builds on the **Embedded SCA** concept. This paper compares Embedded SCA with another scheme known as **Direct Mode.**

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| **Feature** | **Embedded**  **SCA** | **Direct**  **Mode** | **Comment** |
| Multiple Development Options |  |  | **Direct Mode** permits *anybody* to develop a payment service including keeping the design *private*. |
| Platform Independence |  |  | Since **Direct Mode** services are *external* to Open Banking APIs, they may build on any suitable platform. |
| Easy to Standardize |  |  | **Direct Mode** only requires a *single* and fully standardized change to work, while **Embedded SCA** is a framework leaving 99% to payment service developers to define. |
| “Sandbox” Compatible |  |  | **Direct Mode** payment systems can be developed, demoed, and marketed based on “Sandbox” implementations. |
| “Cloud” Compatible |  |  | **Direct Mode** permits multiple deployment models, including running payment services in the cloud. |
| Service Isolation |  |  | **Direct Mode** makes it logical running payment services on dedicated hosts making maintenance and upgrades more manageable than in *monolithic* Open Banking API implementations. |
| Support for popular P2P payment systems like “Swish” |  |  | **Direct Mode** services are *unrestricted* with respect to flow, security, and processes. |
| Cost Efficient |  |  | **Direct Mode** makes it technically possible creating a *single implementation/code base supporting all Banks.* This is probably a prerequisite for third party vendor support. |
| Concerted Updates |  |  | Updating **Embedded SCA** applications should be *quite challe*nging due to the diversity of Open Banking implementations. |
| EPI (European Payment Initiative) Compatible | **?** |  | **Direct Mode** imposes no constraints. Possible limitations are more likely to be in the Open Banking platform. |
| Security / Authentication |  |  | In the **Direct Mode** security maintained by each of the connected services on their own. Each payment service must also authenticate to the Open Banking service.  In the **Embedded SCA** model most of the security is confined to implementations-specific solutions inside of the Open Banking framework.  *These methods should be comparable although it seems that it should be easier to audit software that is 1) used by more customers 2) is not a part of another framework.* |



V0.13, 2020-11-28, Anders Rundgren