

operational services GmbH & Co. KG

CSN INITIAL INFORMATION
FOR PARTNERS OF THE VOLKSWAGEN GROUP

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SUMMARY OF APPLICATIONS / SERVICES / PROTOCOLS

The following table illustrates options of data exchange / collaboration via dedicated applications / services / protocols with the Volkswagen Group:

Application Service Protocol	CAD data exchange		Network connection			Which contracts are required?					Information security assessment ³	valid NDA? ⁴
	asynchronous	synchronous	VW PFN	Audi PFN	Internet	CSN contract	PDM contract	SimplIX contract	Remote Access contract	Contract with certified net provider ²	→ Release is required for at least	
HyperKVS		✓	✓			✓	✓			✓	confidential data	✓
SimplIX	✓				✓			✓			confidential data	
CONNECT		✓	✓			✓	✓			✓	confidential data	
ZMB			✓			✓	✓			✓	confidential data	
ECA			✓			✓	✓			✓	confidential data	
Syncrofit			✓			✓	✓			✓	confidential data	
VW DMS			✓			✓	✓			✓	confidential data	
Enterprise 2.0 - Platform				✓		✓				✓	internal data	
Citrix Netscaler			✓	✓		✓				✓	internal data	
TE DMZ device				✓		✓				✓	internal data	
OFTP1			✓	✓		✓				✓	internal data	
OFTP2	✓				✓	✓					internal data	
Secure i.do Client			✓						✓	✓	confidential data	
Secure VI			✓						✓	✓	confidential data	
RAS VI			✓						✓	✓	confidential data	
Audi AP2				✓		✓				✓	internal data	
Further PFN applications ¹			✓	✓		✓				✓	internal data	

¹ Further applications/services upon request

² Whether the partner must conclude a contract with a certified net provider or not depends on the net connection type selected by the partner, see document „Technical Data“ [HTTPS://WWW.OPERATIONAL-SERVICES.DE/EN/SUPPLIER-SOLUTIONS/CSN/DOWNLOAD-CENTER](https://www.operational-services.de/en/supplier-solutions/csn/download-center). (A net provider contract is not required if the desired net connection type is Internet VPN client-to-site.)

³ Assessment method corresponds to specified data classification, please inform at webpage <https://portal.enx.com/en-us/TISAX/>

⁴ Non-Disclosure Agreement (NDA) with a brand of the Volkswagen Group

1 DEFINITION OF APPLICATIONS / SERVICES / PROTOCOLS

1.1 HyperKVS

HyperKVS is used for data exchange, revision-proof archiving and the conversion of CAx data into the respective required file format. HyperKVS is used by all parties involved in the product development process.

HyperKVS enables the upload of CAx data directly on the data platform, the linking of it to a design/construction status and provision to the responsible designer. Once the data has been activated for the partner it can be downloaded directly from HyperKVS.

The drawings displayed in HyperKVS are implicitly converted to TIFF format. The viewer „Imaging for Windows“ is part of the Windows standard scope of supply and usually sufficient.

1.2 SimplX

With the solution SimplX construction data can be exchanged once or rarely via internet. Data can be sent and received; any internet access can be used. The SimplX access is user-specific.

Terms of use:

- Period of use up to 365 days
- Extension possible
- Data volume: max. 200 GB/year

Requirements for partner:

- Valid Non-Disclosure Agreement (NDA) with relevant brand of the Volkswagen Group
- Proof of information security for at least a high (confidential) protection level, in accordance with the Volkswagen Group specifications appropriate to TISAX®
- Confirmation to the use of SimplX by the responsible contact partner (mentor) of a Volkswagen Group department
- Signed assurance of compliance with IT-guidelines

Exchange of secret data via SimplX is not permitted.

1.3 CONNECT

CONNECT is a Volkswagen Group software that serves as an integrated PDM system (Product Data Management system) across participating Group brands, sites, business areas and its external partners.

The main objective is the provision of CONNECT as a central database for the Volkswagen Group, and thus optimize comprehensive work processes in the area of vehicle project development and cross-brand module development, as well as ensure a synchronous collaboration between brands and partners of the Volkswagen Group.

1.4 ZMB

The Zone Management Reporting System (ZMB) is an in-house development of the Volkswagen Group. It is a Group wide used web application. ZMB enables the user to prepare and process collision information obtained for a synchronized cooperation of all involved in the development process. ZMB is used to store, evaluate and track the results of the DMU analysis process.

1.5 ECA

ECA stands for Engineering Center Aggregate. It is a Windchill database adapted to the requirements of aggregate development for the administration of CAD data, parts and parts lists. The objective of the system is the consolidation of all development-relevant information and its provision for all partners within the aggregates process chain. It offers functions for process control, CAD data and order management as well as for test and assembly documentation for motors. As a web portal, ECA supports the process consistency of aggregate development throughout the Volkswagen Group and maps the associated ordering system.

1.6 Syncrofit

Syncrofit is a system of the Volkswagen Group Data Management Connection Technology (K-DVT), which supports many departments in the definition and implementation of joining processes.

In the early project phase, a fat-client is used to set up the connection technology in parallel to the individual parts. Different process partners read in the connection technology automatically and evaluate it. Syncrofit enables the determination of the joining sequence, the three-dimensional representation of connecting elements as well as transparency of joining processes.

1.7 VW DMS

VW DMS stands for Volkswagen Dokumenten-Management-System and serves as central management system for organized file storage. In VW DMS documents

- are made available centrally
- are stored securely and
- are stored in a structured manner.

On the basis of the assigned properties of a document, a high-quality search can be carried out.

Documents can easily be shared with others and are quickly retrievable (e.g. by means of full text search).

1.8 PDM applications

The applications HyperKVS, CONNECT, ZMB, ECA, Syncrofit and VW-DMS are systems for product-data-management. The use of PDM applications requires the conclusion of a PDM contract, in addition to the CSN contract, for application support. Using PDM applications, especially HyperKVS and CONNECT, in cooperation with Audi an accompanying access to Audi mynet (Social Media at Audi) is furthermore recommended.

1.9 enterprise 2.0 – platform (Social Media at Audi)

The aim of „Social Media at Audi“ is to establish a working environment with state-of-the-art communication and collaboration facilities. The following social media can be reached via the Audi PFN:

Audi mynet is an internal communication platform that openly and transparently provides information and publications on a wide range of topics. Contents can be published quickly and easily and, above all, can be found.

The section Technical Development currently offers around 1000 pages, of which almost 250 are available in German and English – and the trend is rising. The section was also divided into the categories such as "strategy", "locations", "processes" or "knowledge center".

With *Audi wiki* users can intuitively collect, process and utilize knowledge for individual teams or the entire company. Numerous social functions such as sharing, commenting or subscribing to content enable efficient knowledge management at a central location.

In *Audi dox* workspaces can be set up in which files and documents can be stored and shared across different sites and departments. The focus is on temporary work data.

1.10 OFTP1

Transfer protocol for exchange of EDI data between VW/Audi host systems and the partner. OFTP software for data exchange is required.

1.11 OFTP2

The Odette File Transfer Protocol 2 (OFTP2) enables electronic and encrypted data exchange via internet between the Volkswagen Group and its partners. The protocol complies with the recommendation of the VDA (German Association of the Automotive Industry).

With OFTP2, only design/construction data is exchanged. Unlike OFTP1, a SSL/TLS-encrypted TCP/IP connection is established where each individual TCP/IP packet is encrypted. A separate encryption at file level is required if data is buffered or routed through, e.g. at a network provider.

The partner receives an OFTP2 certificate for TLS encryption from the Odette organization. OFTP software for data exchange is required as well. Any internet provider can be used for data exchange via OFTP2.

Please note:

The use of SimplX and OFTP2 for the exchange of design/construction data is only allowed if your responsible mentor belongs to one of the following Volkswagen Group companies:

VW Germany passenger cars, VW of America, VW Mexico, VW Portugal, VW Poland, VW China, VW Slovakia, VW India, VW Russia, Audi, Bugatti (status as of 23.05.2018, subject to change without notice).

1.12 Citrix/WTS jump server

These are jump servers to different systems located in the Volkswagen and/or Audi intranet.

Individual activation and request processes by the ordering Volkswagen Group department are required.

1.13 Remote Access (VW) – Secure i.do client / Secure VI / RAS VI

	Secure i.do Client	Secure VI	RAS VI
Technical connection	Dedicated connection of a certified net provider with managed router	Dedicated connection of a certified net provider	Internet
Client	VW Hardware i.do Client	Partner company hardware virtual i.do Client	partner company hardware virtual i.do Client
Location	Fixed partner company location Premises at partner company are available and approved on-site according to Secure i.do Client requirements	Fixed partner company location	Fixed partner company location or separate space according to RAS VI requirements
Availability	Wolfsburg area only	worldwide	worldwide
Authentication	VW PKI	VW PKI (VMware Client) or VW SecurID (Citrix)	VW PKI (VMware Client) or VW SecurID (Citrix)
Data classification	Permitted for the exchange of maximum confidential information Exchange of secret data is not permitted	Permitted for the exchange of maximum confidential information Exchange of secret data is not permitted	Permitted for the exchange of internal information Exchange of confidential data only with compliance with additional requirements Exchange of secret data is not permitted
TISAX®	Proof of a valid TISAX® label with at least assessment level "high protection requirement".	Proof of a valid TISAX® label with at least assessment level "high protection requirement".	For the data classification "confidential information", proof of a valid TISAX® label with at least assessment level "high protection requirement" must be provided.

More detailed information can be found at:

<https://www.operational-services.de/en/supplier-solutions/remote-access/>

2 CERTIFIED NET PROVIDERS

In order to exchange data with the Volkswagen Group, the partner needs a technical connection to the respective partner network (VW and/or Audi PFN) for (various) application access(es). This technical connection is only possible via special net connection types presented in a network connection portfolio of the Volkswagen Group. For the majority of these net connection types, a separate contract between partner and certified net provider is required.

Connection alternatives for establishing a connection to the partner company network VW/AUDI	Internet VPN (client-to-site)	Internet VPN (site-to-site)	Dedicated connections DSL- / Cable-based	ENX/ANX	Standard leased line
In order to exchange data with the Volkswagen Group, the partner needs a technical connection to the respective partner network (VW and/or Audi PFN) for (various) application access(es). This technical connection is only possible via special net connection types presented in a network connection portfolio of the Volkswagen Group. For VPN-based connection variants, except for internet-VPN OnNet, a dedicated line is not required - your existing internet access can be used.					
technical requirement	(existing) internet connection	(existing) internet connection	DSL- / cable based	ENX/ANX-network	standard leased line
provider	any provider	any provider	Vodafone	certified ENX provider	T-Systems British Telecom Vodafone local Provider (COM-IN, WOBCOM)
notice		the internet connection of the provider company must be compatible with the standard function IPsec Pass Through Power			
provider connection set-up "Partner company network VW/Audi"	Vodafone	Vodafone / British Telecom Germany	Vodafone	certified ENX provider	provider of standard leased line
hardware for VPN tunnel set-up	hardware token	VPN router	VPN router	ENX/ANX router	information on request
connection can be used for communication with other partners				✓	
contractual handling	additional option of CSN contract	provider contract with Vodafone / British Telecom Germany	contract with provider Vodafone	contract with certified ENX/ANX-provider	contract with provider of the standard leased line
notice				in case of an existing ENX/ANX network connection, the conclusion of a communication relationship is sufficient	
hardware distribution	delivery by operational services	Vodafone /delivery of VPN router by provider BT / Non-EU; procurement of VPN router by partner, configuration by BT EU: information on request	delivery of router directly by provider to partner	distribution of router directly by provider to partner	information on request
guaranteed availability and bandwidth	depending on the locally available internet connection	depending on the locally available internet connection	depending on the locally available bandwidth	is possible	is possible
estimated time of provision (after conclusion of the contract; data without consideration of dispatch times)	about 2 weeks	6-10 weeks	6-10 weeks	information on request	information on request
single point of contact in the connection operations	operational services	operational services	operational services	operational services	operational services
application- and target system-dependent special conditions	only unidirectional data exchange from partner to Volkswagen and Audi is supported		only provider for JIT-VW	only provider for JIT-Audi, also by internet VPN router	
one-time costs	Charge for provision per hardware token (user): 70,00 € Setup charge per hardware token (user): 90,00 €	direct agreement between provider and partner	direct agreement between provider and partner	depending on connection type	direct agreement between provider and partner
running costs	Basic charge per hardware token (user): 30,00 €			depending on connection type	

3 PRECONDITIONS OF THE VOLKSWAGEN GROUP

Preconditions for connecting the partner to the Volkswagen and/or Audi partner network (VW and/or Audi PFN) according to Volkswagen Group guidelines are:

3.1 Non-Disclosure Agreement (NDA)

For connection to the Volkswagen and/or Audi partner network a valid NDA with at least one commissioning Group brand is mandatory. The procedure for concluding NDA depends on the brand. Please discuss the details with your commissioning Group department.

3.2 Information Security Assessment

The proof of appropriate information security by a TISAX® assessment is a precondition for the technical connection to the partner network of Volkswagen and/or Audi. A sufficient, valid TISAX® label is accepted as proof of compliance with information protection. The common testing and exchange platform "TISAX®" (=Trusted Information Security Assessment Exchange) enables a common recognition of test results within the automotive industry. The successful information security assessment must be provided for each location of the partner, involved in the collaboration with Volkswagen Group. For more information, see: <https://www.enx.com/en-US/tisax/>

3.3 Certified Net Providers

Data exchange or the usage of services of the Volkswagen Group is only possible by using predefined connection types and certified net providers.

For detailed information see the document „Technical data“ (<https://www.operational-services.de/en/supplier-solutions/csn/download-center/>) which must be filled in completely for connection setup.

There are solutions/products for the connection to the VW and/or Audi partner network or for data exchange with the Volkswagen Group for which a contract with a certified net provider is not required (see page 1 "Synopsis", page 8 "connection variants" or document "Technical data"). Please note: The selection of a connection variant must finally be checked for suitability for the intended application and system access.

3.4 Approval of the mentor from the Volkswagen Group and approval of the IT-connection set-up

Both the connection of a partner of the Volkswagen Group to the VW and/or Audi PFN as well as the use of Volkswagen Group applications and services for data exchange require the approval of a responsible mentor of the Volkswagen Group. The responsible mentor is an internal employee of the Volkswagen Group who acts as contact person for the partner in the context of cooperation projects. Furthermore, compliance with the Group's framework guidelines, provision of a valid NDA and proof of the TISAX® label is checked by the Central Know-How Protection Service (CKPS). The result of the check is the approval or rejection of the IT connection set-up. If one of the two preconditions isn't fulfilled, commissioning of the connection to the partner company network of Volkswagen/Audi is not permitted.