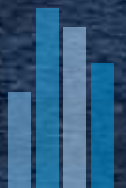


The IT and data security measures considered necessary for implementing remote access



Technical

- Network
 - Separated from production network - VLAN
 - Dedicated firewall
 - One way traffic – production to research network
- Tokens - multiple factor authentication
 - Identification
 - PIN code
 - Physical device
 - Token
 - Mobil phone

Technical - sslvpn

- Client connectivity
 - Encryption of traffic from client to gateway
 - HTTPS – only TLS (1.0), 1.1 and 1.2
 - Client software
 - Java
 - ActiveX
 - VPN software
 - Microsoft remote desktop

Technical – Remote desktop

- Restrict desktop functionality
 - No copy/paste between client and research data
 - No printing
 - No drive mapping
 - Etc.
- RDP traffic contains only keyboard, mouse and screen updates
- RDP and VPN encryption
- Minimal requirements for client configuration without compromising security

Data

- Keep data under ICBS control
 - Physical – Keep data in house
 - Logical ???
- Remove identifiable variables
- Encryption of identifiers
- Individual encryption key for each project
- Directories for RAWDATA and WORKDATA
 - RAWDATA is a readonly directory for data from ICBS
 - WORKDATA is a working directory where researchers can analyze data

Data - Logging

- Use of diskspace
- Use of application server
- Logon activities from Active Directory
- Data access
 - File level
 - Database
- SIEM Security Information and Event Management

Output control

- Automatic output control
 - False positives
 - False negatives
 - Minimize data formats
 - Standard output ?
- Manual output control – full or samples
- Output – on/off
- Keep copy of all output for 6 months (logging)
- contractual sanctions
 - Research institution is responsible
 - Defined sanctions if data confidentiality is being breached
 - Exclusion for a month

Output control – file extensions

- Excel - xls xlsx xlsm xlm xml
- Grafik - eps png wmf tif jpg gif emf tif jpeg svg bmp ppt pptx pptm tiff
- HTML - htm html mht
- Programkode - sas r sps do doh ado
- Logs - Log
- SAS - lst sas7bdat sas7bcat
- SPSS - Dat
- R - rdata rda spv
- GAUSS - raw sav spo
- Stata - dta gph smcl ster
- Tekst - csv cvs tab txt
- Latex - Tex
- PDF - pdf xps
- Word - doc docx rtf

Output control – automatic scanning

Mønsternummer	Længde	Indhold	Note
1	12	Numerisk	Valide PNR-variable Flere ID-variable (familie_id, sags_id, ydernr mv.)
2	10	Numerisk	Valide CVR-variable og SE-variable
3	10	Alfanumerisk	PNR-variable med bogstaver
4	16	Alfanumerisk	OPGIKOM-variable
5	22	Alfanumerisk	BOPIKOM-variable
6	20	Numerisk	RECNUM-variable
7	34	Alfanumerisk	ADRKOD og lign.
8	14	Numerisk	SVPNR og lign.
9	24	Numerisk	MAAL_KEY og lign.

Awareness

- Researchers doesn't care about IT security
- Educate researchers in IT security!
- Sanctions
- Awareness campaigns
- Online test