**Top 5 reasons to use a personal cloud storage solution**

1. **Users always have access to their documents, regardless of the location or device**
2. **Documents can easily be shared with others**
3. **The available solutions are user-friendly**
4. **Resolves storage restrictions**
5. **To encourage providers to keep the entry threshold as low as possible (free)**
Top 5 reasons why this is less desirable

1. Privacy and security are not guaranteed, rights are being given away, PRISM
2. Mainly US-based providers, → Patriot Act
3. Lack of legal protection, no SLA
4. Data ownership, data is no longer available once participant leaves the institution
5. Privacy and publication terms and conditions do not meet education and research community requirements
What does SURFdrive offer?

- SURFdrive offers the same level of user-friendliness as Dropbox in accordance with the Legal Framework for Cloud Services in Higher Education.
- Data is stored within SURF In accordance with the highest privacy and security requirements.
- Makes it easy to share data within the community and allows for guest use through SURFconext.
Top 5 reasons to use SURFdrive
Privacy /Security

1. Data is stored in data centres managed by SURF and/or institutions

2. Processes are established in accordance with the high risk category defined in the Legal Framework

3. The community defines its own terms and conditions regarding usage, sharing and termination of the services

4. Data ownership: data remains available (under the institution's control) when staff members leave the institution

5. Privacy and publication terms and conditions meet the requirements imposed by the academic world
SURFdrive service description

• **Features**
  - Storage : 100 GB
  - 20 * carryover
  - Access to SURFconext
  - High standard of privacy / security
  - Guest use
  - Sync app MS, Linux, iOS
  - Mobile Apps: iOS, Android

• **Under development:**
  - New functionalities added on a continual basis
  - Maintenance portal
  - Webdav connection (iAnnotate)

• **Availability**
  - 99.5 % April 2014
  - 99.9 % January 2015

• **Monitoring**
  - April 2014, during office hours
  - 1 January 2015 or earlier 7*16

• **Support**
  - DIYS (end users)
  - By institutions (first-line)
Framework Standards for HE&R

Has been prepared to establish reliable and secure cloud services and set standards in the field of:

- confidentiality

- privacy

- Intellectual property

- availability
1. End 2013, selection process
2. 22 January start pilot Owncloud
3. March: evaluation pilot, service description & pricing
4. March go/no-go SURFdrive service
5. June start SURFdrive service
Actual usage
Security

Policy
- Framework Standards for HE
- Data classification
- Highest level classification <-> usability
- Collaborate with security community

Todo
- Audit ISO 2700x
- TPM

Operational
- Best practices check
- Vulnerability scan
- Pentest webenvironment
- SSL test Qualys -> A+
- Procedures (changes, incidents, testing)
Crypto challenges

- SSL and single layer defence approach
  - Trust & TLS

- wish: full encryption of files (not available in OC)
  - problem: how to share?
    - In you domain: doable
    - External share: challenge

- Howto de-encrypt in webGUI?
  - Browsers don’t have (yet) sufficient crypto lib
  - Javascript crypto is feasible

- How distribute password or keys

- Password reset by admin?
  - Or dataloss when password forgotten
Federation integration

- Federated login, institute able to provision users
- Federation = SAML = web based
- Web based SSO just works
- OC enterprise supports Shibboleth (SAML)

- How to integrate Owncloud service
  - Sync clients (OSX, Windows, Linux)
  - Mobile (IOS, Android)

-> OC uses embedded browser for Shib-login

- Disadvantage: two sessions (1x Shib, 1x OC)
Federation lessons learned

- Embedded browser construction tricky
- Difficult know works all institute LAN
- Automated testing is needed (by OC)
- WebDAV = basic authentication
- Federation = http redirects
- OC webdav not available when using Shib-log
Which developments can we expect to see in future?

1. Broader use will reduce costs
2. Institutions assign rights to users
3. Institutions share storage environments (Federated)
4. Expansion of functionalities
5. Expansion of storage capacity
6. In the event of proven success, a greater number of community cloud services will be offered through the SURF Community Cloud
What are the biggest challenges?

1. Maximising the number of participants per institution
2. Maximising the number of participating institutions
3. Convincing end users of the benefits and need
   - Privacy and security
   - Value of the network increases as the number of participants is squared
   - Heightened importance as more participants can share information
4. Minimising costs while maximising security and privacy
Market developments

- Large number of players
- Market is diversifying
- Suppliers are choosing their own approaches
- De facto standard
- Large number of new features
- Varied pricing
Why is the solution attractive to end users?

1. 100 GB capacity (free of charge)
2. Allows for collaboration with colleagues, other higher education and research institutions
3. Files can be accessed from any device
4. Allows for sharing with guest users in any location around the world
5. Secure and protected against the invasion of privacy, within the Dutch legal framework
Questions?