

# Country Report:

## Norway



# NDR key parameters



Name of the NDR	Diskos NDR
Type of organisation	Government
Operating since:	1972
Employees:	220 total in NPD. 4-6 persons working with Diskos NDR (outsourced)
State participating agency:	Norwegian Petroleum Directorate
State Supervisor:	Ministry of Petroleum and Energy

Type of data	
Onshore	No
Offshore	Yes
License information	Yes (managed in NPD not Diskos)
Production information	Yes

# Objectives – Diskos NDR



- The NPD digital archive for E&P data from Norwegian Continental Shelf (NCS)
- To sustain the position of the preferred store of petroleum data for companies active on NCS
- Dissemination of a “trusted source” of quality controlled petroleum data
- Long-term storage of petroleum data stored in open industry standard formats



# Diskos - The Norwegian National Data Repository (NDR)



- NPD manages the Diskos contract on behalf of the **Diskos joint venture**
  - Coordinator
  - Legal entity
- NPD and a number of major oil companies set up the Norwegian NDR – “Diskos” launched in 1995
- Seismic data, well data, monthly production reporting data and data trades
- Data is available through secure access - operating 24/7


# NPD Fact Pages: npd.no

- **Key data**

- Wellbores
- Licences
- Business areas
- Fields
- Discoveries
- Companies
- Surveys
- Etc.

**FACTPAGES**  
NORWEGIAN PETROLEUM DIRECTORATE

Wellbore Licence BAA Field Discovery Company Survey Facility TUF Stratigraphy



**Petroleum register**  
[Production licences](#)  
[Transport licences](#)

**Shortcuts**  
[Exploitation licence](#)  
[Field production](#)  
[Wellbore statistics](#)  
[Map services](#)  
[FactMaps](#)

**FactPages**  
NPD FactPages contain information regarding the petroleum activities on the Norwegian continental shelf. The information is synchronised with the NPD's databases on a daily basis.

**Subscription**  
To receive news about NPD FactPages by e-mail, please [subscribe here](#).

**Feedback**  
We constantly strive to improve this product, and would appreciate your feedback. Please send any comments and questions to [factweb@npd.no](mailto:factweb@npd.no).

**Use of content**  
The content on the FactPages may be used in accordance with [Norwegian Licence for Open Government Data](#) (NLOD). In this context we emphasize that there may be limitations with respect to the use of information subject to third party rights, such as reports, core images and logs etc.

# Diskos Operations

## *Well, Seismic & Production Modules*



- Data operations, support & service delivery provided at CGG's offices at iPark, Stavanger
- Open industry (PPDM) data model, provided by CGG's Trango solution
- CGG quality verification tools, tape copying & transcription software



- Help Desk Support provided at Kadme's offices at iPark, Stavanger
- Open architecture framework, provided by KADME's Whereoil platform
- Trades Module: Open architecture framework, provided by KADME



























- Primary data center located at EVERY's facilities in Green Mountain
- Secondary (DR) data center & media handling located at EVERY's facilities in Forus

***Trade Module***

# Diskos Members 2019 - 2020



Member Type		2020	2019	2018
Members	O&G Companies	38	42	47
Associated Members	Service Companies	22	22	25
	Universities / non-profit organisations	16	16	13

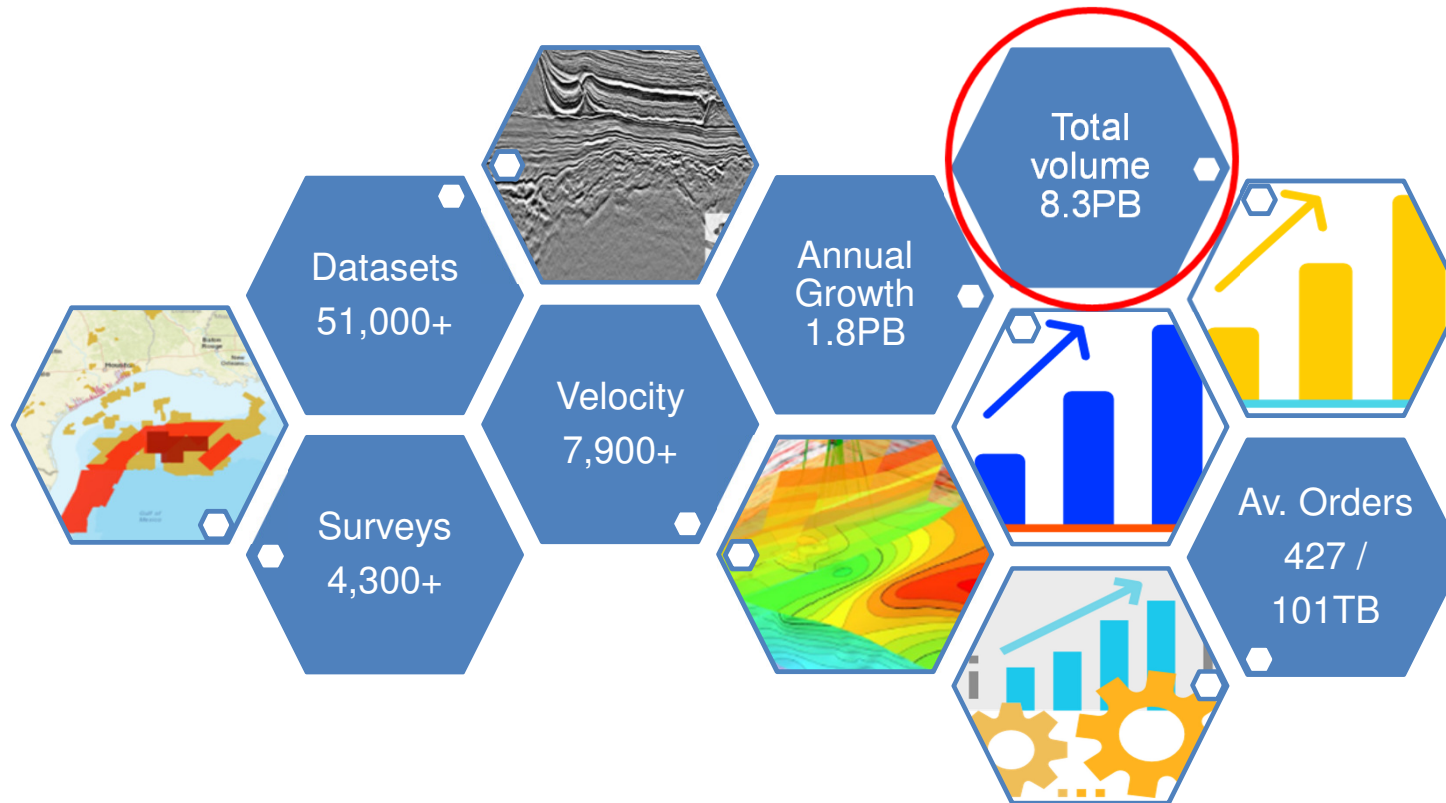
						
						
				Heriot-Watt Univ.	Univ. i Oslo	
				Imperial College	Univ. i Stavanger	
				NORCE Norwegian Research Centre AS	Univ. i Tromsø - Norges Arktiske Univ.	
				Norges Geologiske Undersøkelse	Univ. på Svalbard AS	
				Norges Teknisk-Naturvitenskapelige Univ. (NTNU)	University College London	
				Royal Holloway Univ. of London	Univ. of Edinburgh	
				SINTEF AS	Univ. of Manchester	
				Univ. i Bergen	Univ. of Texas at Austin	
Univ. & Academic Inst.: 16						

Diskos Members: 42

Associated members: 22

NDR 2019, 14-17 October 2019, Utrecht The Netherlands

# Seismic Status & Activity



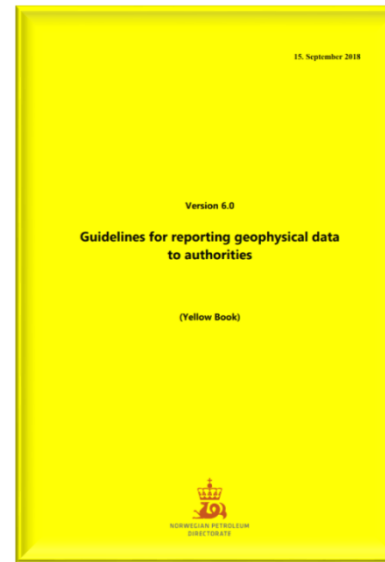


# Well Status & Activity



# Challenges

- Reporting compliance – geophysical data:
  - Seismic data should be reported according to the newest standards
  - SEG-D 3.1
  - SEG-Y 3.0
  - P1/11 & P2/11 positioning formats
- These formats have still not been adopted by the industry!



# Challenges

- “Open data”
  - How can “released data be used?”
  - Legislation is unclear
  - How can we remove the hindrances to use of released data?
    - i.e. For use in AI/ML?
    - Commercial products?
    - Etc.



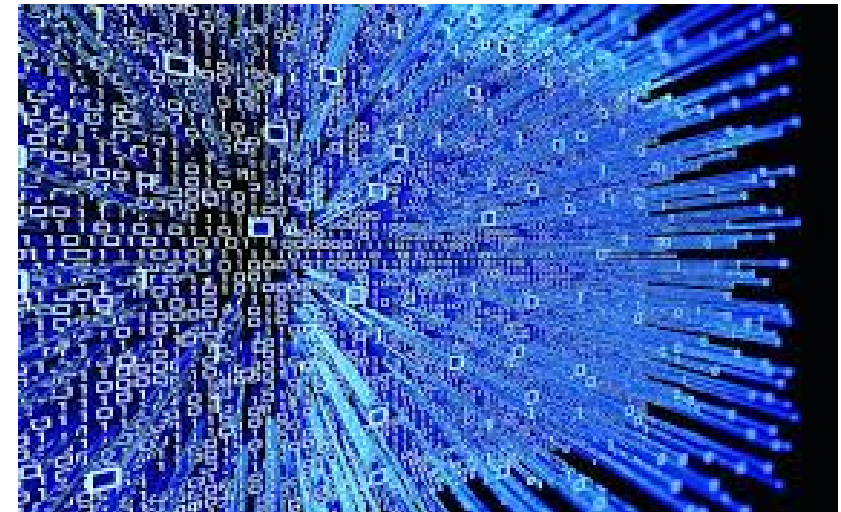
# Successes

- Operations for >24 years
  - All Norwegian oil and gas companies are members
  - Associated members:
    - Service industry participation
    - Universities & research organizations (non-profit)
      - increasing interest from UK and USA universities
- Search and retrieve E&P data from an area of interest
  - Download to local interpretation software
- Access to significant volumes of public data



# Successes

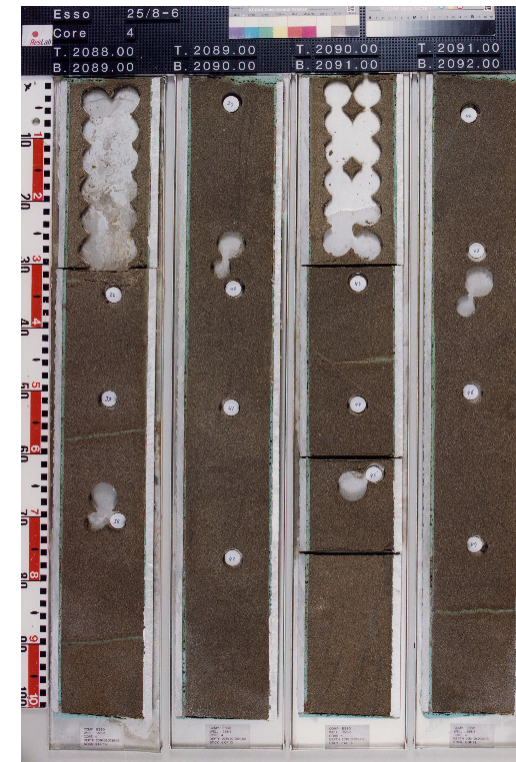
- Managing significantly increased data volumes (> 8 Petabytes)
- Improved data coverage (seismic & well)
  - Reporting compliance
  - Legacy data loading
- Production data at wellbore level now publicly available
- Funding of joint initiatives
  - Improved meta-data quality
  - Loading of legacy data
- Efficient data trading



# Weatherford / Stratum Core Photos Project

## Scope:

- Load digitized core images missing, or with poor quality, to Diskos.
- Data pre 2000, will be prioritized.
- Phase 1: digitize images (photos and negatives) stored at Weatherford.
- All “released wells” containing core images in category NPD Requirement = “Mandatory” in Bluebook Table A1.

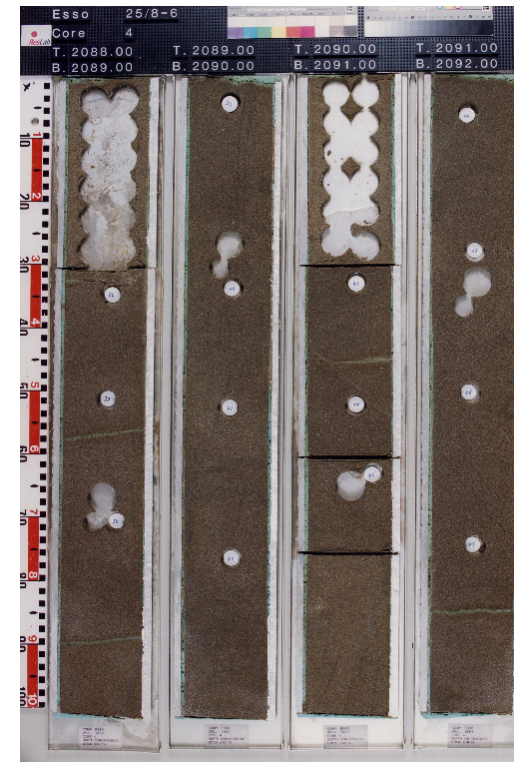




# Weatherford / Stratum Core Photos Project

## Status per 1.9.2019:

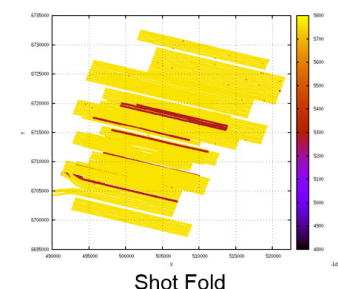
- 5 batches received so far
  - April: 700 files
  - May: 2700 files
  - June: 2800 files
  - Mid-August: 3300 files
  - Late-August: 3200 files
- Currently QC'd and loaded to Diskos: approx. 6000 files
- Approx. 17 000 photos remains to be scanned by Stratum
- Estimated completion date is 31.12.2019



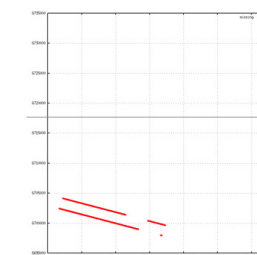
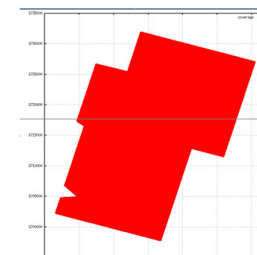
# Future Plans - Enhanced Seismic QC



- QC products of value
  - Additional trace headers
  - Time slices, live coverage
  - Primary navigation from SEGY headers verified against navigation information pre-loading to database
  - Automation & smart QC
  - Field and pre-stack QC, near trace plots, fold coverage map
  - Generation of near trace 3d volumes, time slices of 3D BIN gather datasets
  - QC products available for download, supporting entitlements, where possible
  - Strict verifications to data standards and Seismic Reporting Guidelines (Yellow Book)



3D BIN GATHERS Coverage



Work Group Representatives		
AkerBP (1)	Equinor (2)	NPD (2)
CGG (3)	Lundin (1)	Shell (1)
Diskos Mgmt (2)	Neptune Energy (1)	Wintershall (1)



# Future Plans



- **Diskos 2.0**

- Main focus for the Diskos Joint Venture is the re-tendering of operations and services for the next contract period
- RFI was issued Q2 2019
- RFP is planned to be issued Q1 2020
  - Contract award approx Q4 2020
  - Start up operations Q2 2022



# Revised timeline

The original plan aimed for announcement of the procurement(s) mid-November 2019 with selection of the new Diskos contractors late June 2020. With the revised plan, the RFP-documents will be announced on Doffin/TED mid-January 2020 and the aim is to award the contracts in the beginning of October next year.



# Diskos 2.0



- **RFI**

- Excellent response from industry
- 13 different groups submitted documents to describe how Diskos could be managed in the future
  - A challenge for “Diskos Core Team” and work groups to digest information from the RFI to be used in the RFP



# Diskos 2.0



## • RFP

- Requirements process – **rigorous/exhaustive**
- Capture all “as-is” in current operations, including all change requests
- “To-be” functionality
- Cross module functionality
- Overarching principles

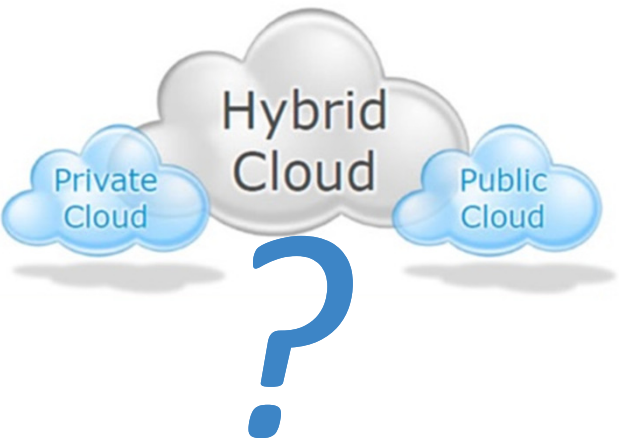
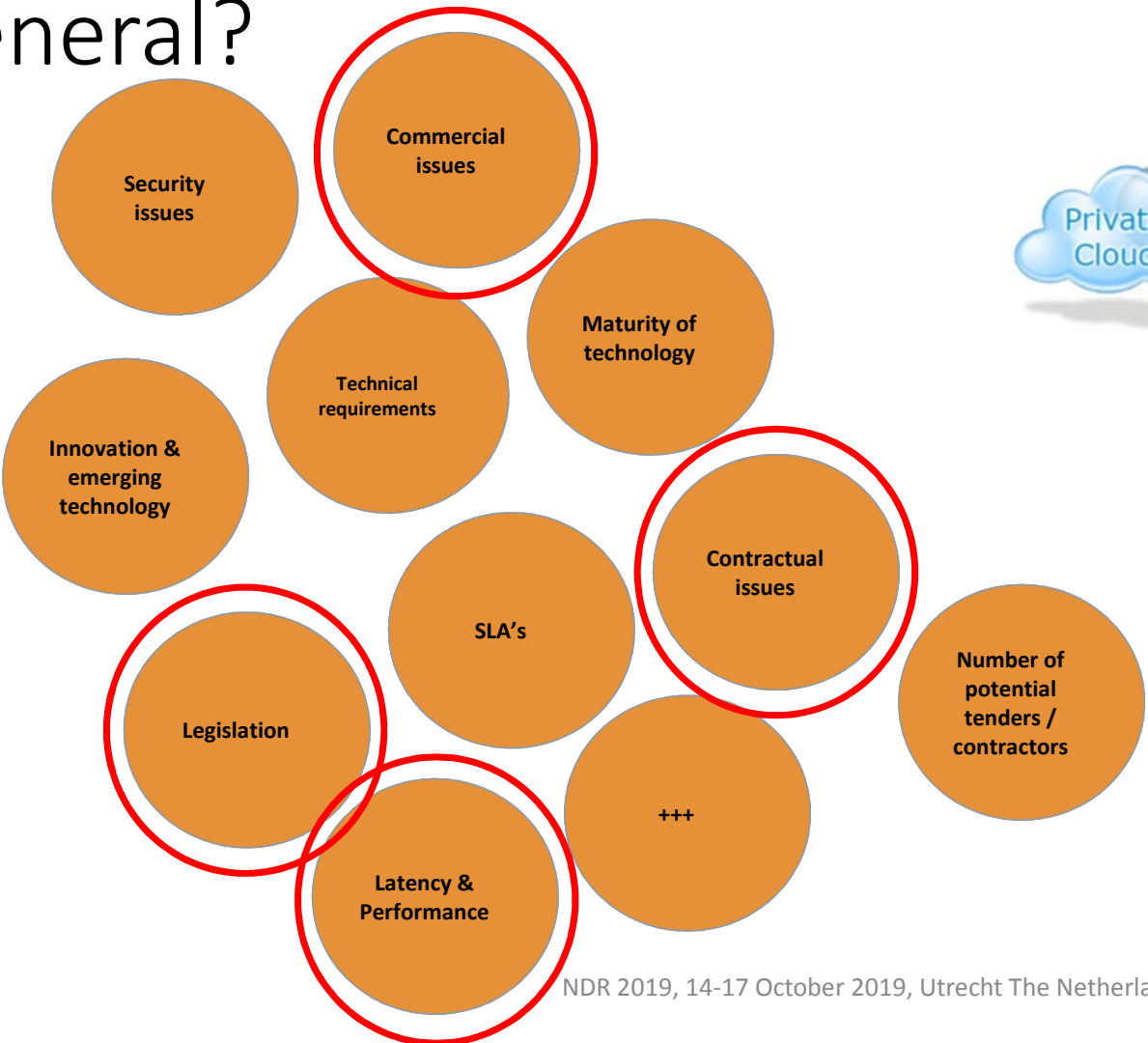


# Diskos 2.0

- **Data storage – “Cloud”**
  - Private?
  - Hybrid?
  - Public?



# What affects the cloud strategy - in general?



# Diskos 2.0

## • Cloud storage

- Current legislation states that Diskos data must be stored in Norway
- Norwegian Archive Law
- Exemption from the legislation was applied for but **not granted** at this stage
- “However, if a copy of Diskos is stored in Norway, for example by mirroring a service on Norwegian soil, cloud storage abroad will be within the current regulations”



08/10/2019 In June 2019, the NPD applied for exemption from the Archive Law which says that all Diskos-data must be stored in Norway.





# Questions?