FREMCO A/S

New opportunities for FTTH rollout with Fremco products

FREMCO

Fremco A/S

- Fremco A/S was founded in 1945 in Northern Denmark.
- The first blowing machine came in operation in 1996 (still in operation).
- In 2007, Niels S. Hansen bought Fremco A/S
- Today, we are ISO certified and thousands of fiber blowing machines are in operation - all over the world - sold through selected resellers.
- Gazelle regional winner 2019 – fastest growing production company

ISO 9001
Management System Certification
BUREAU VERITAS
Certification Denmark A/S

tmt TELECOMS AWARDS 2016
Fremco A/S
Most Innovative Fibre Cable Blowing Equipment Company 2016

FREMCO
FIBERBLOWING MACHINES


FREMCO
FREMCO
FREMCO
FREMCO
FREMCO
FREMCO
FREMCO
FREMCO
FREMCO
FREMCO
FREMCO
FREMCO
FREMCO
FREMCO
FREMCO
FREMCO
FREMCO
RUSSIA
KAZAKHSTAN
INDIA
ALGERIA
LIBYA
EGYPT
BRAZIL

Fiber Blowing Market

Fiber Blowing Machines and Compressors by Segment

FTTH

70%

Duct OD – 3 – 16 mm
Fiber OD – 0.8 – 6.5 mm

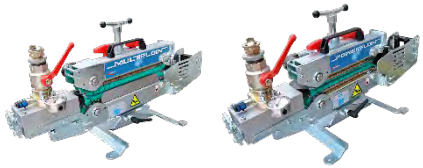
NanoFlow or MicroFlow

Access Net

20%

Duct OD – 7 – 20 mm
Fiber OD – 3 – 12 mm

MiniFlow RAPID



Backbone

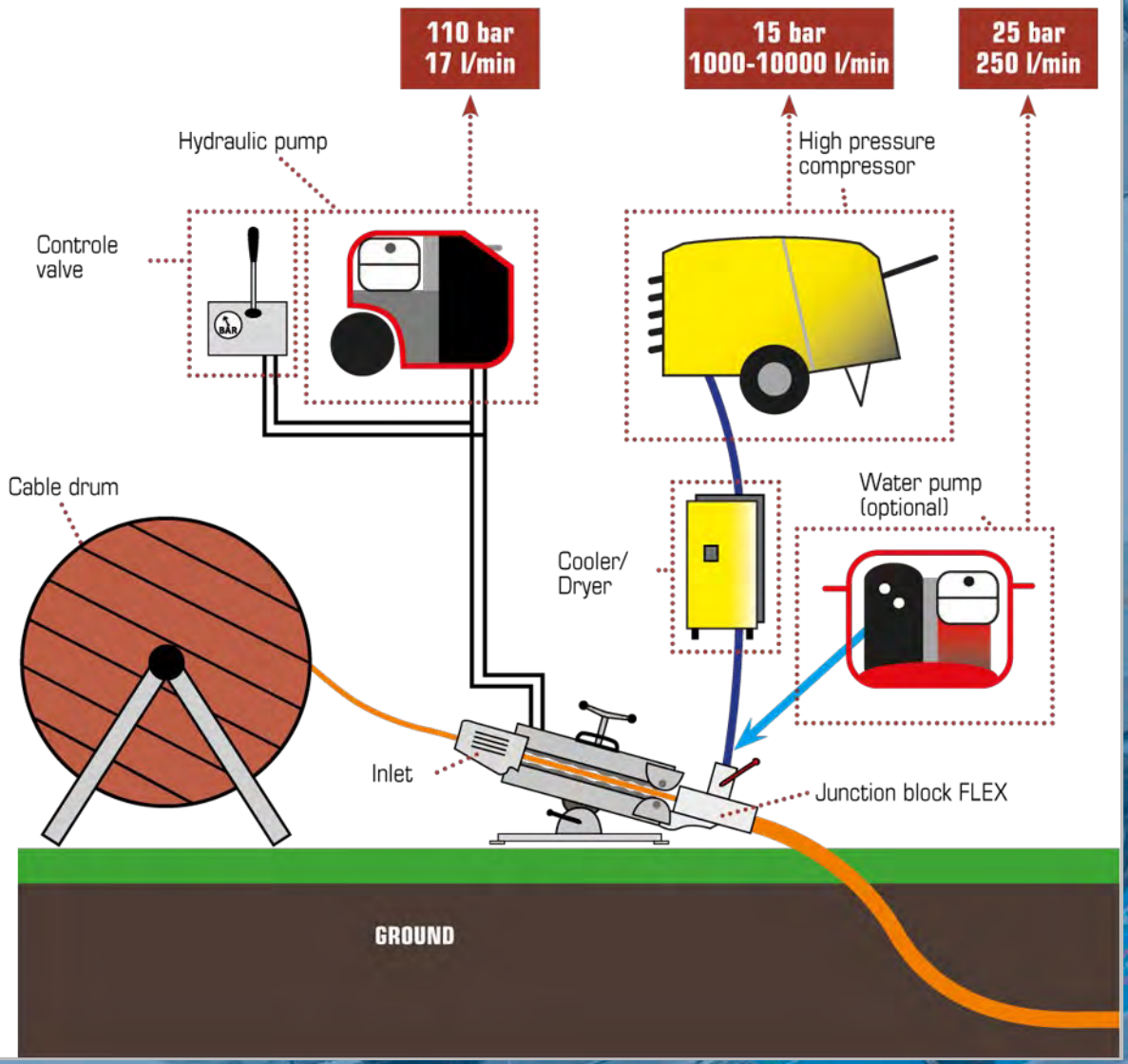
10%

Duct OD – 10 – 63 mm
Fiber OD – 5.5 – 32 mm

MultiFlow or PowerFlow

FREMCO
FIBERBLOWING MACHINES

Power Source Overview



FREMCO
FIBERBLOWING MACHINES

Why choose a Fremco machine?

Reliability
Designed for use in harsh conditions (cold, hot, wet or dry)

Robust design
Simple construction with few moveable parts

Availability
Blowing Equipment, Accessories and Spare Parts in stock

Responsive
Customer Service and Repair

Competitively priced against main competitors

FREMCO
FIBERBLOWING MACHINES

BEST Factory Warranty in the Business!

NanoFlow

- Duct size: 3-10 mm
- Fiber size: 0.8-3.0 mm
- Install speed up to 150 m/min.
- Max. blowing distance: 1200 m
- Unique double fiber protection
- Quick load of fiber and duct
- No tools needed = very easy to configure/operate/start up
- Easy load and removal of pre-connected products
- Wide selection of accessories

FREMCO
FIBERBLOWING MACHINES

MEMBER OF Fibre to the Home Council Europe

NanoFlow MAX

- Duct size: 3-12.7 mm
- Fiber size: 0.8-4.5 mm
- Install speed up to 125 m/min.
- Max. blowing distance: 1200 m
- Unique double fiber protection
- Tools free installation
- Adjustable clamping force

FREMCO
FIBERBLOWING MACHINES

MEMBER OF Fibre to the Home Council Europe

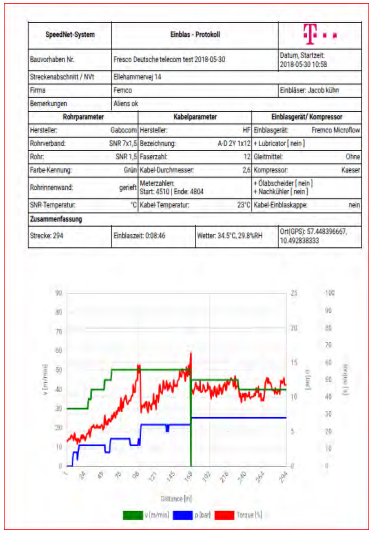
MicroFlow Touch

- Duct size: 4-16 mm
- Fiber size: 0.8-6.5 mm
- Install speed up to 90 m/min.
- Max. Blowing distance: 2500 m
- Useful data logging
- Electronic control unit
- Unique fiber protection

FREMCO
FIBERBLOWING MACHINES

MEMBER OF Fibre to the Home Council Europe

MicroFlow LOG



SpeedNet-System	Einblas - Protokoll		
Bauvorhaben Nr.	Fremco Deutsche telecom test 2018-05-30		Datum, Startzeit: 2018-05-30 10:58
Streckenabschnitt / NVt	Ellehammervej 14		
Firma	Fremco		Einbläser: Jacob Kühn
Bemerkungen	Aliens ok		
Rohrparameter	**Kabelparameter**		**Einblasgerät/ Kompressor**
Hersteller: Gabocom	Hersteller:	HF	Einblasgerät: Fremco Microflow
Rohrverband: SNR 7x1,5	Bezeichnung:	A-D 2Y 1x12	+ Lubricator [nein]
Rohr: SNR 1,5	Faserzahl:	12	Gleitmittel: Ohne
Farbe-Kennung: Grün	Kabel-Durchmesser:	2,4	Kompressor: Kaeser
Rohrinnenwand: geriefl	Meterzahlen: Start: 4510 | Ende: 4804		+ Ölabscheider [nein] + Nachkühler [nein]
SNR-Temperatur: °C	Kabel-Temperatur:	23°C	Kabel-Einblaskappe: nein
Zusammenfassung			
Strecke: 294	Einblaszeit: 0:08:46	Wetter: 34.5°C, 29.8%RH	Ort:(GPS): 57.448396667, 10.492838333

- Duct size: 4-16 mm
- Fiber size: 0.8-6.5 mm
- Install speed up to 90 m/min.
- Max. Blowing distance: 2500 m
- Intelligent data logging
- Unique fiber protection
- Documentation of quality, performance, project progress etc.

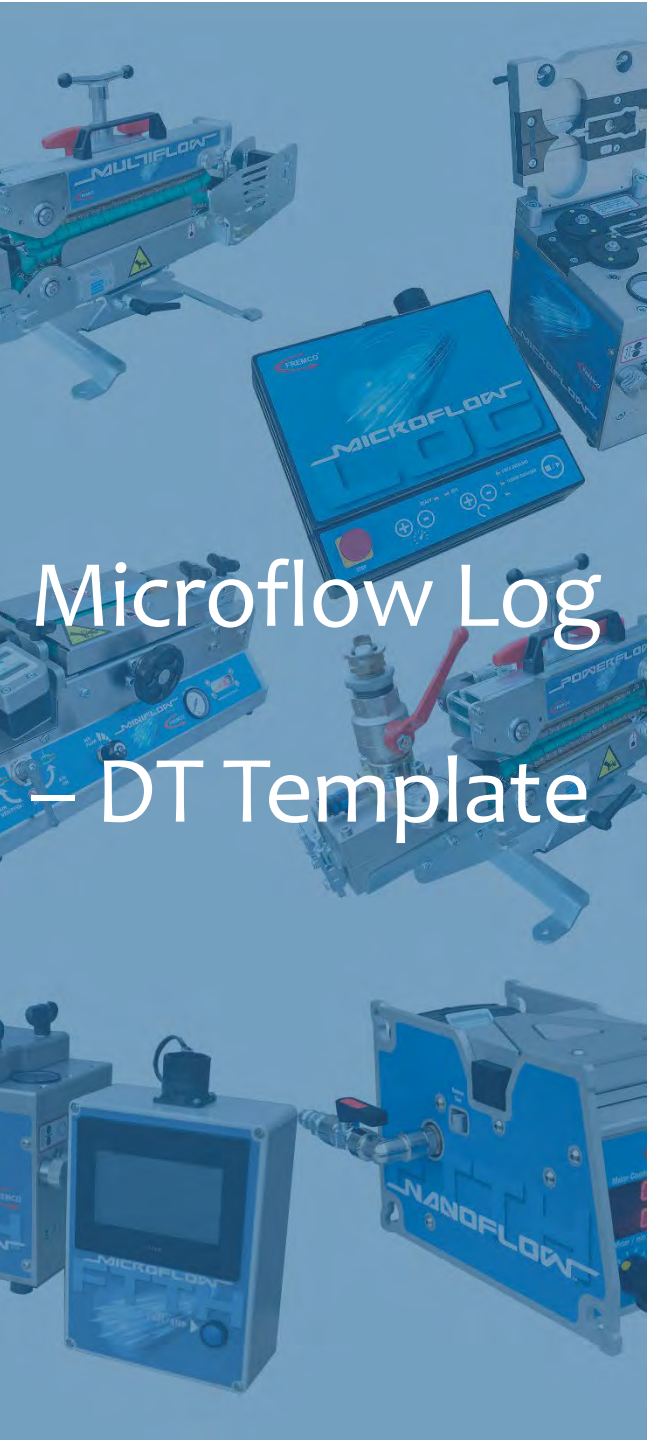
FREMCO
FIBERBLOWING MACHINES

MEMBER OF Fibre to the Home Council Europe

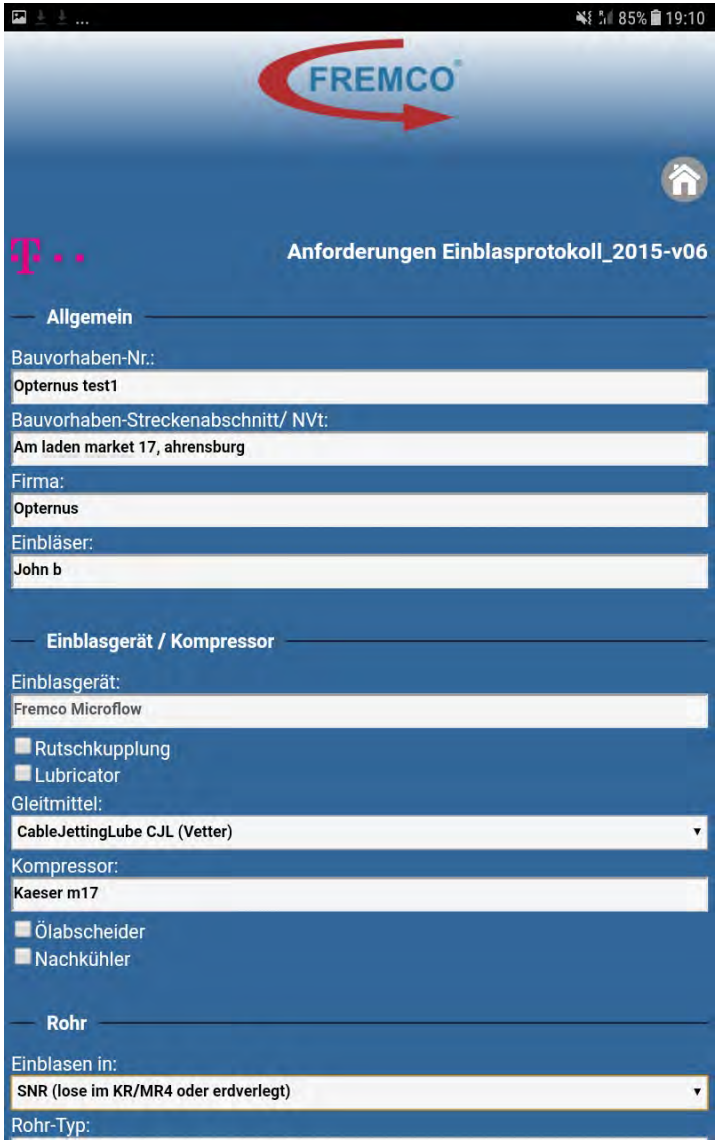
DTAG-ZTV-40 FREMCO solution Microflow LOG

- Solid and a rugged design modified for daily use in harsh conditions
  - Electronic HW
  - Software operated machine
  - Ergonomic Design
  - Modern connectivity

FREMCO
FIBERBLOWING MACHINES



Microflow Log – DT Template



FREMCO
FIBERBLOWING MACHINES

FREMCO

SpeedNet-System	Einblas - Protokoll		T
Bauvorhaben Nr.	Opternus test1		Datum, Startzeit: 2018-04-08 19:20:07
Streckenabschnitt / NVt	Am laden market 17, ahrensburg		
Firma	Opternus		Einbläser: John b
Bemerkungen	1 stop		

Rohrparameter		Kabelparameter		Einblasgerät/ Kompressor	
Hersteller:	Gabocom	Hersteller:	Nexans	Einblasgerät:Fremco Microflow	
Rohrverband:	SNR7	Bezeichnung:	A-D 2Y 1x4	+ Rutschkupplung [No] + Lubricator [No]	
Rohr:	SNR	Faserzahl:	4	Gleitmittel: CableJettingLube CJL (Vetter)	
Farbe-Kennung:	Weiß	Kabel-Durchmesser:	1,6	Kompressor:	Kaeser m17
Rohrinnenwand:	glat	Meterzahlen: | Start: 1200 | Ende: 1250		+ Ölabscheider [No] + Nachkühler [Yes]	
SNR-Temperatur:	15°C	Kabel-Temperatur:	16°C	Kabel-Einblaskappe:	No

Zusammenfassung			
Strecke: 59	Einblaszeit: 0:04:40	Wetter: 18°C, 65%RH	Ort(GPS): 53.123456, 9.123456

SpeedNet-System	Einblas - Protokoll		T
Bauvorhaben Nr.	Fresco Deutsche telecom test 2018-05-30		Datum, Startzeit: 2018-05-30 10:58
Streckenabschnitt / NVt	Ellehammervej 14		
Firma	Femco		Einbläser: Jacob kühn
Bemerkungen	Aliens ok		

Rohrparameter		Kabelparameter		Einblasgerät/ Kompressor	
Hersteller:	Gabocom	Hersteller:	HF	Einblasgerät:	Fremco Microflow
Rohrverband:	SNR 7x1,5	Bezeichnung:	A-D 2Y 1x12	+ Lubricator [nein]	
Rohr:	SNR 1,5	Faserzahl:	12	Gleitmittel:	Ohne
Farbe-Kennung:	Grün	Kabel-Durchmesser:	2,6	Kompressor:	Kaeser
Rohrinnenwand:	gerieft	Meterzahlen: Start: 4510 | Ende: 4804		+ Ölabscheider [nein] + Nachkühler [nein]	
SNR-Temperatur:	°C	Kabel-Temperatur:	23°C	Kabel-Einblaskappe:	nein

Zusammenfassung			
Strecke: 294	Einblaszeit: 0:08:46	Wetter: 34.5°C, 29.8%RH	Ort(GPS): 57.448396667, 10.492838333

Microflow Log PDF report for DT P. 2

Streckenlänge [m]	Geschwindigkeit [m/min]	Rohr-Druck [bar]	Schubraft [%]	Uhrzeit [hh:mm:ss]
1	30	0.0	14	18-05-30GMT10:59:23
2	30	0.0	15	18-05-30GMT10:59:25
3	30	0.0	15	18-05-30GMT10:59:27
4	30	0.0	16	18-05-30GMT10:59:32
5	30	0.0	16	18-05-30GMT10:59:33
6	30	0.0	16	18-05-30GMT10:59:34
7	30	0.0	18	18-05-30GMT10:59:39
8	30	0.8	17	18-05-30GMT10:59:41
9	30	1.6	17	18-05-30GMT10:59:43
10	30	2.3	15	18-05-30GMT10:59:45
11	30	2.4	19	18-05-30GMT10:59:49
12	30	2.3	17	18-05-30GMT10:59:52
13	30	2.2	15	18-05-30GMT10:59:53
14	30	2.0	16	18-05-30GMT10:59:57
15	30	1.9	13	18-05-30GMT10:59:59
16	30	2.7	16	18-05-30GMT11:00:01
17	30	3.4	15	18-05-30GMT11:00:03
18	30	3.6	14	18-05-30GMT11:00:07
19	30	3.6	16	18-05-30GMT11:00:09
20	30	3.6	18	18-05-30GMT11:00:11
21	30	3.5	16	18-05-30GMT11:00:15
22	30	3.6	18	18-05-30GMT11:00:17
23	30	3.5	16	18-05-30GMT11:00:19
24	30	3.4	17	18-05-30GMT11:00:21
25	30	3.4	15	18-05-30GMT11:00:25
26	30	3.4	17	18-05-30GMT11:00:26
27	30	3.4	18	18-05-30GMT11:00:29
28	30	3.4	19	18-05-30GMT11:00:33

FREMCO
FIBERBLOWING MACHINES

Unique Points

Microflow LOG P. 1

- The Log can be individually adapted
- Verification of blowing quality (e.g. pressure, length, recommended speed vs blown speed, stress on cable, weather conditions etc.)
- Cost optimization (start and finish of the job)
- Blowing competences and efficiency by team/company

FREMCO
FIBERBLOWING MACHINES

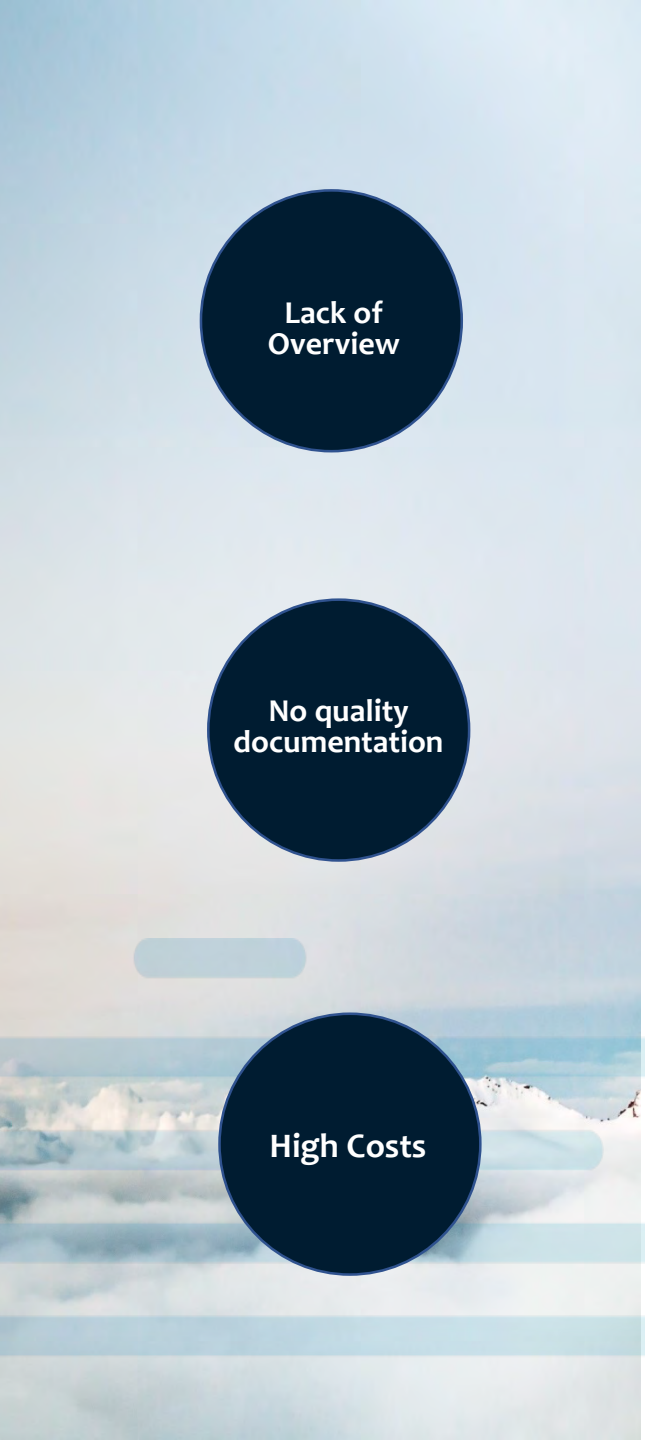
Unique Points

Microflow LOG P. 2

- Duct laying quality / Duct quality for fiber blowing
- Installation quality and cable suitability for blowing
- Utilization of machine
- Maintenance and service recommendations
- GPS coordinates
  (jobs confirmation and invoicing)

FREMCO
FIBERBLOWING MACHINES

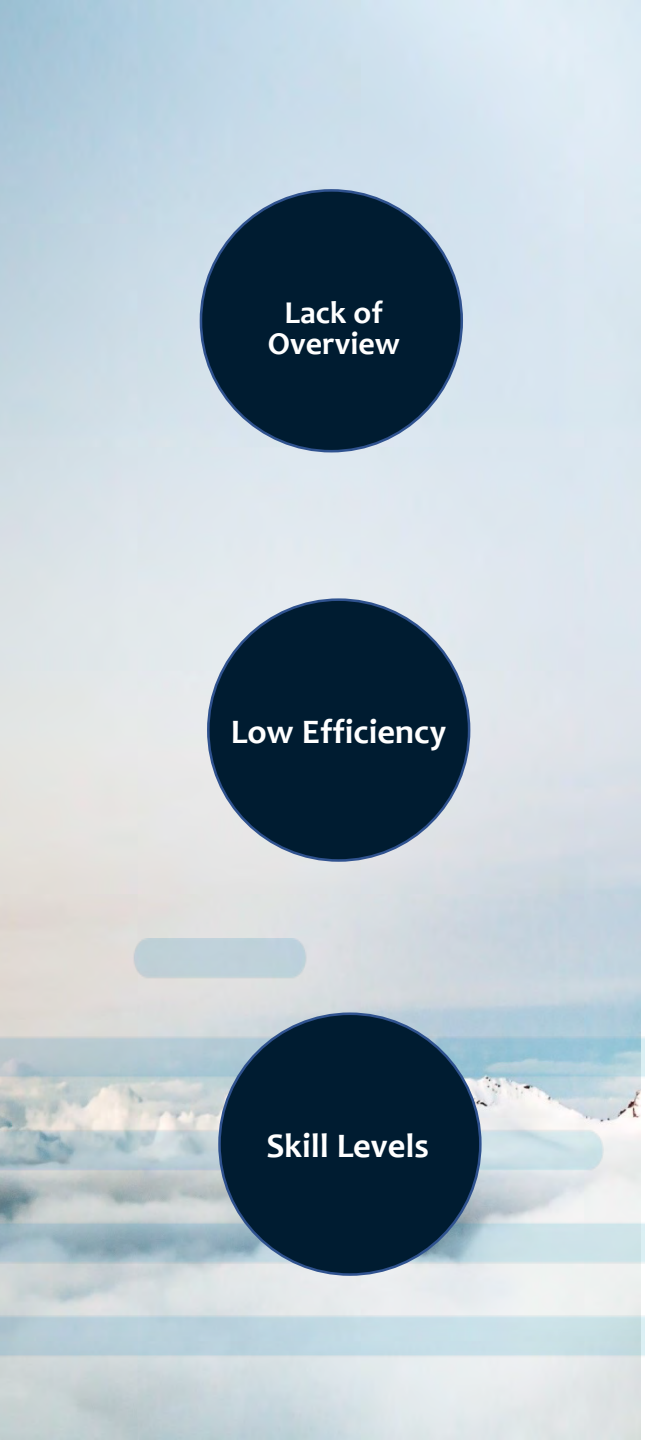

OptiCloud
FIBER DATABASE MADE EASY
OptiCloud
Powered by Fremco



Problems faced by Networks owners

- Costly installation errors
- No benchmarking
- Low implementation rate
- Lack of documentation on installation
- Subsquently mistrust in suppliers

OptiCloud
Powered by Fremco

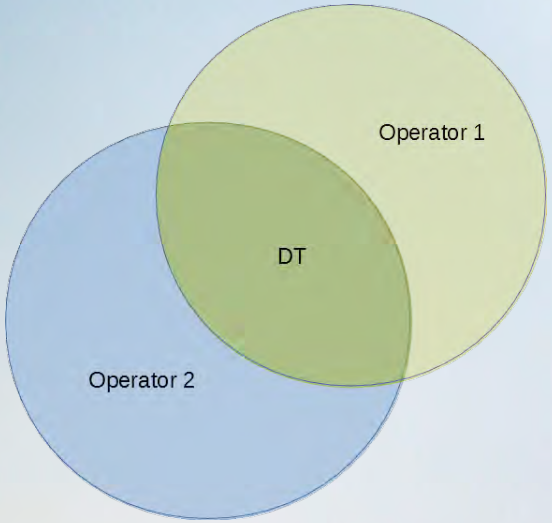


Problems faced by the contractor/installer

- Planned service
- Upgrading skills / internal benchmarking
- Project progress
- Effective geographical coverage

OptiCloud

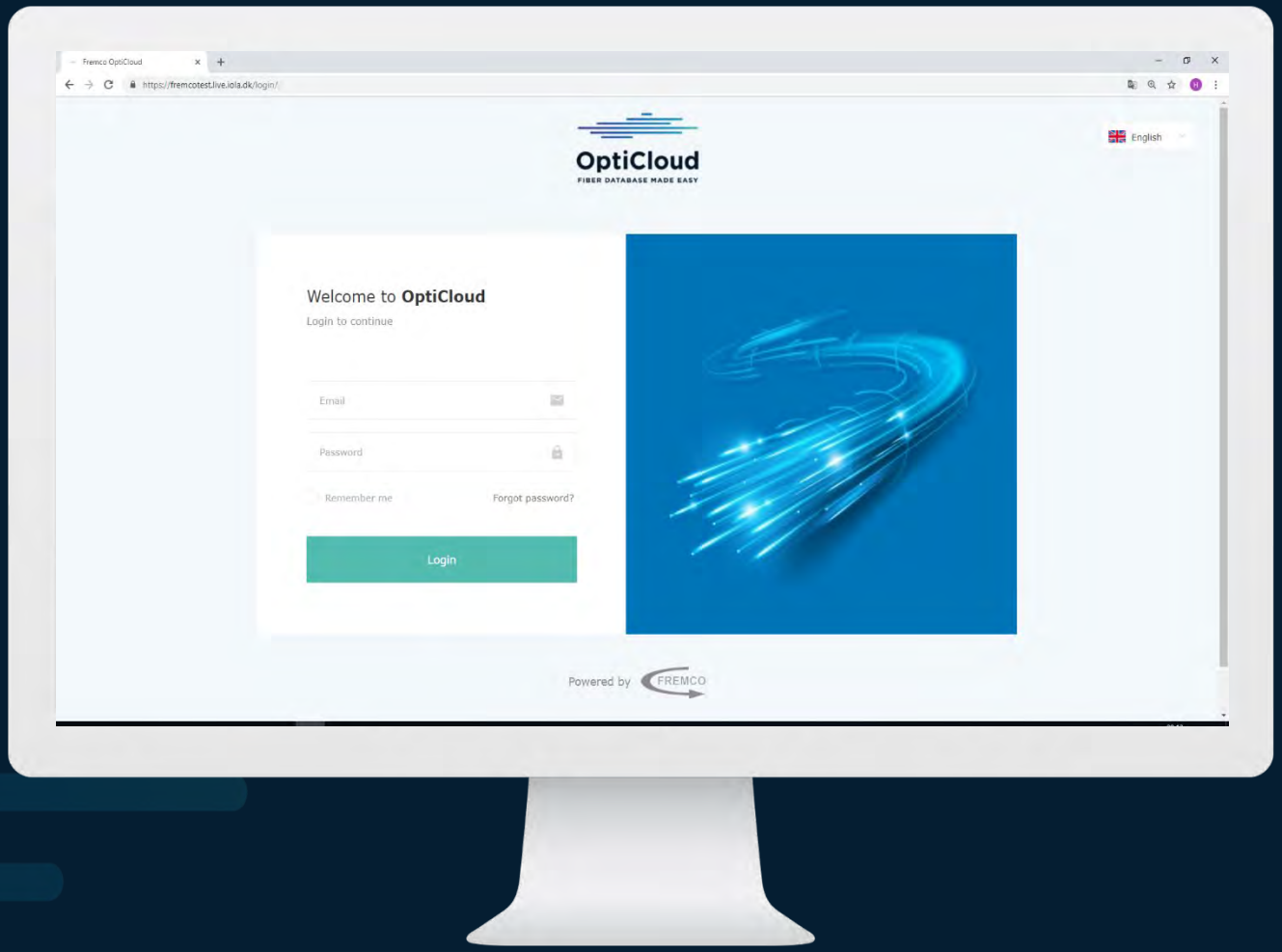
Powered by Fremco



- The Datacubes are only accessable by the owner
- Raw data may be copied to multiple cubes based on ownership
- Data in the cubes can be manipulated into new reports and in the future also custom owner queries
- Datacubes are only accessed through the OptiCloud portal, a future API is considered

OptiCloud
Powered by Fremco

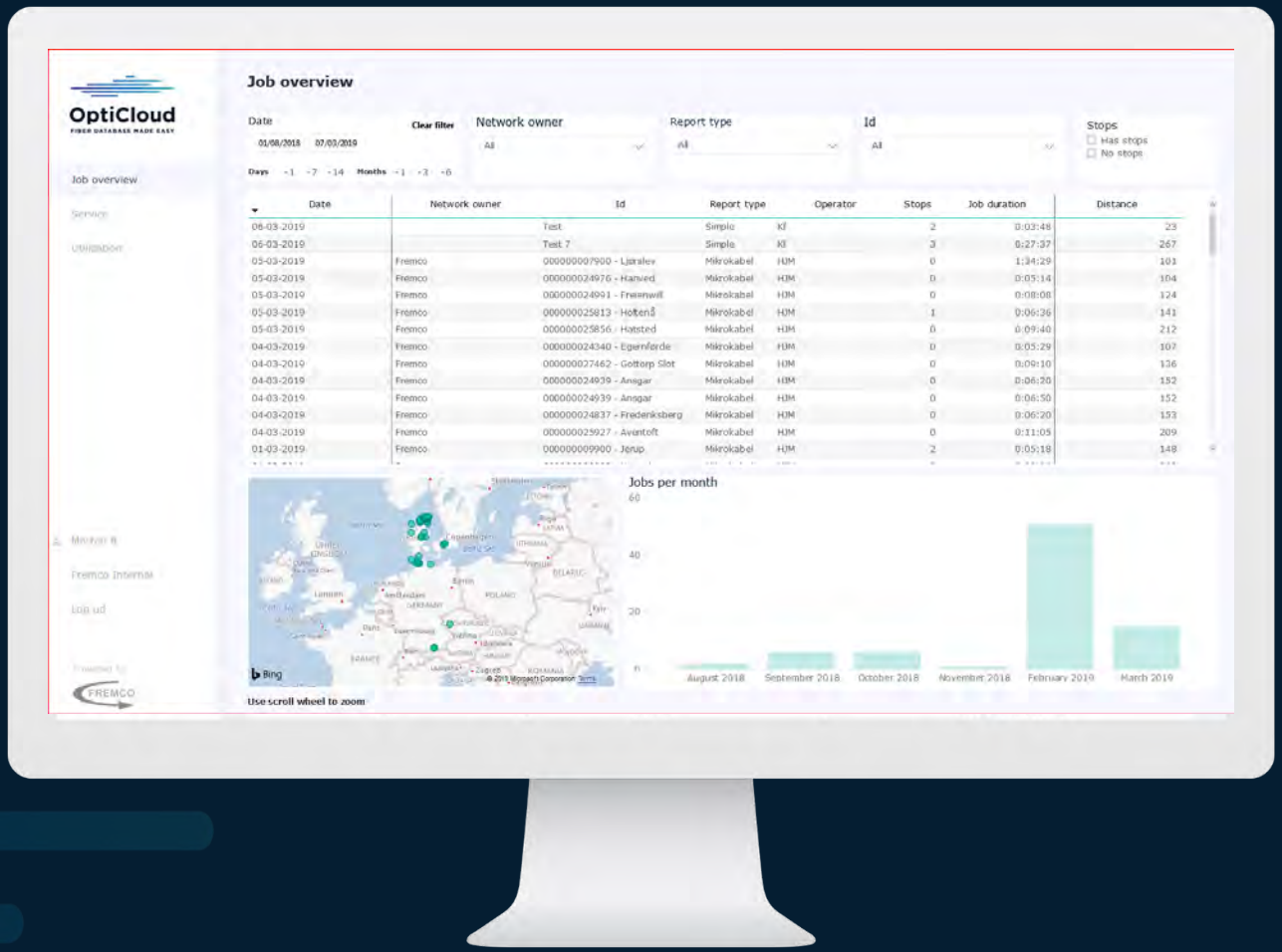
Startscreen



OptiCloud

Powered by Fremco

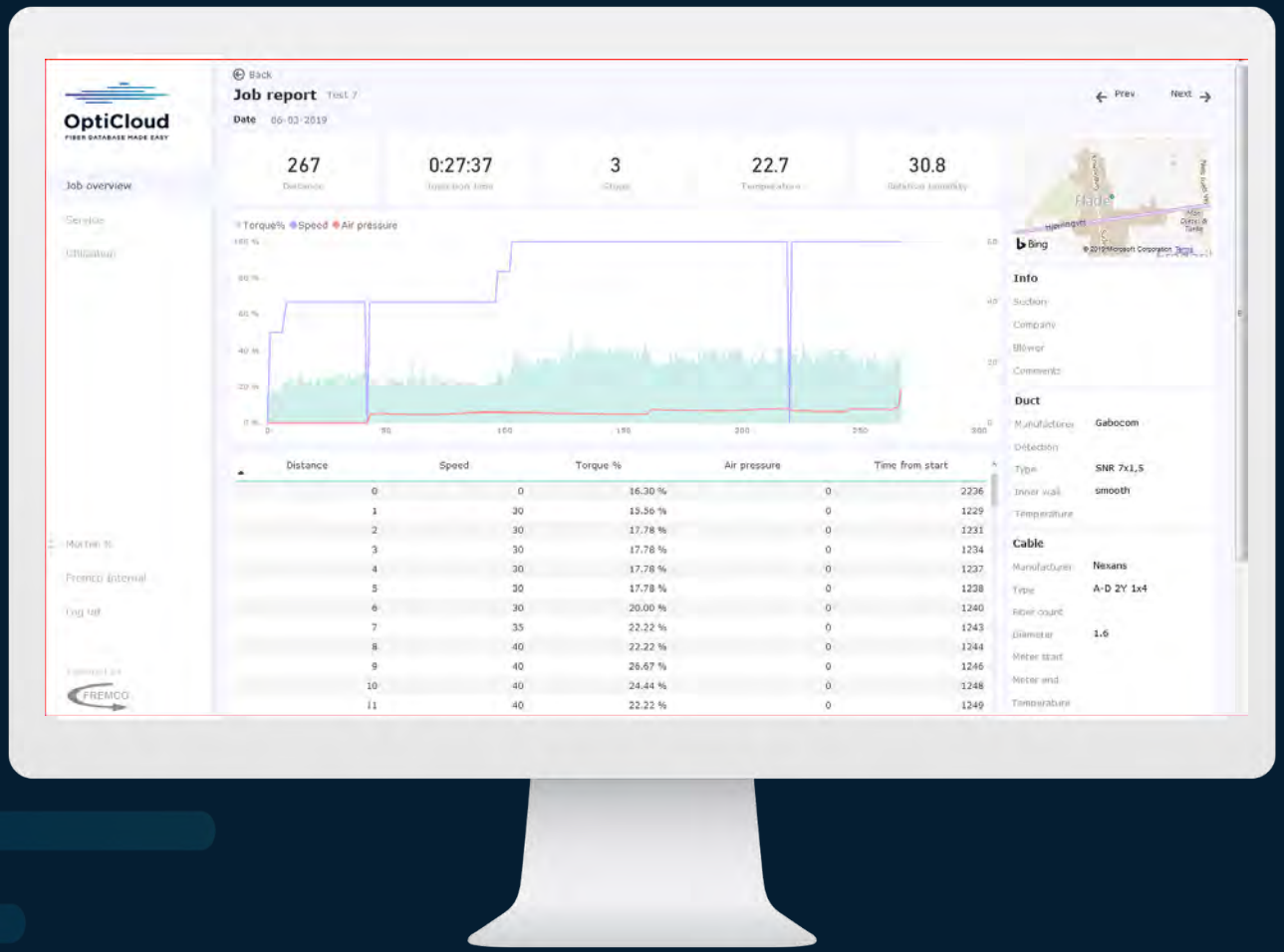
Overview page



OptiCloud

Powered by Fremco

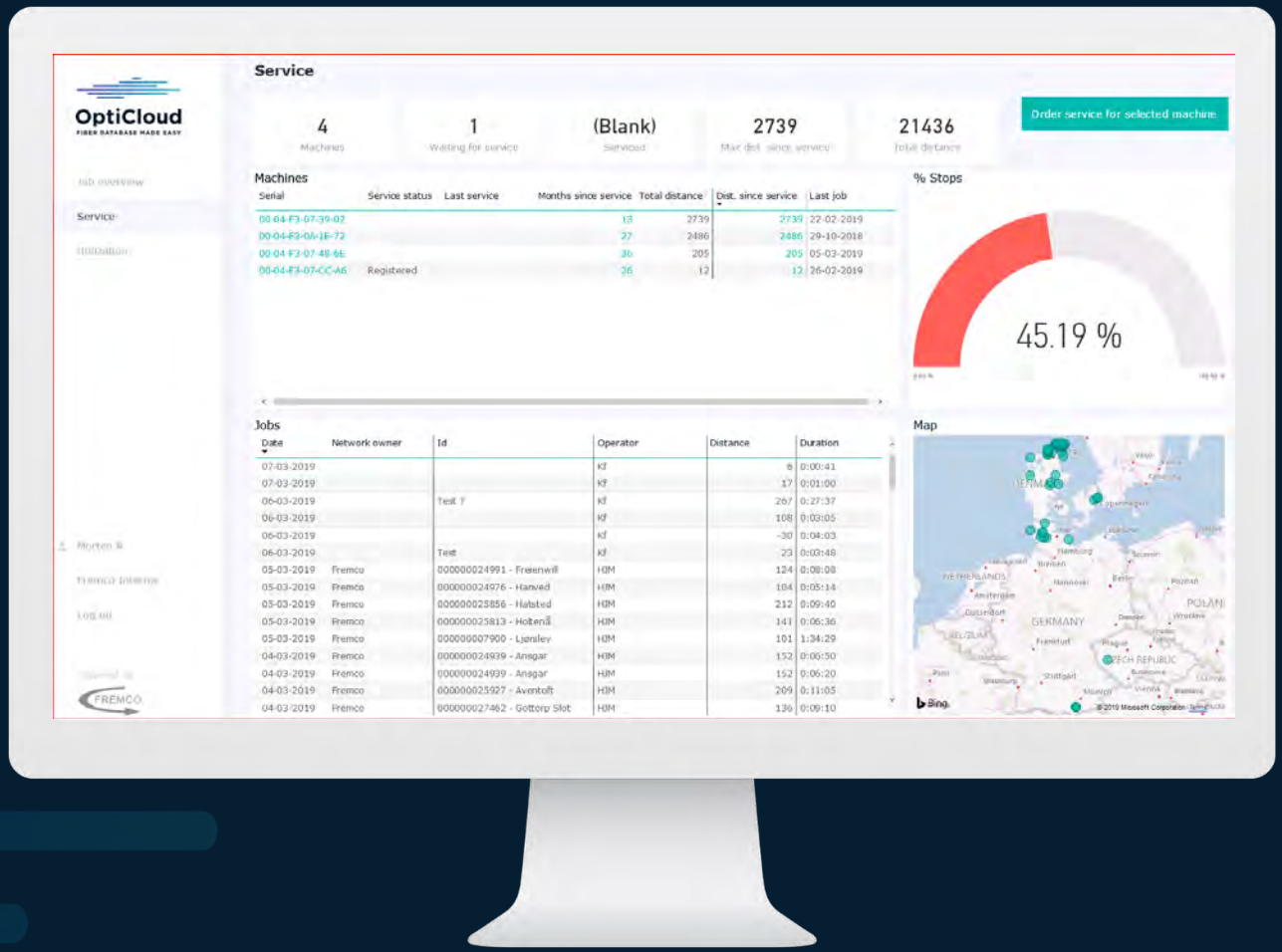
Job Report



OptiCloud

Powered by Fremco

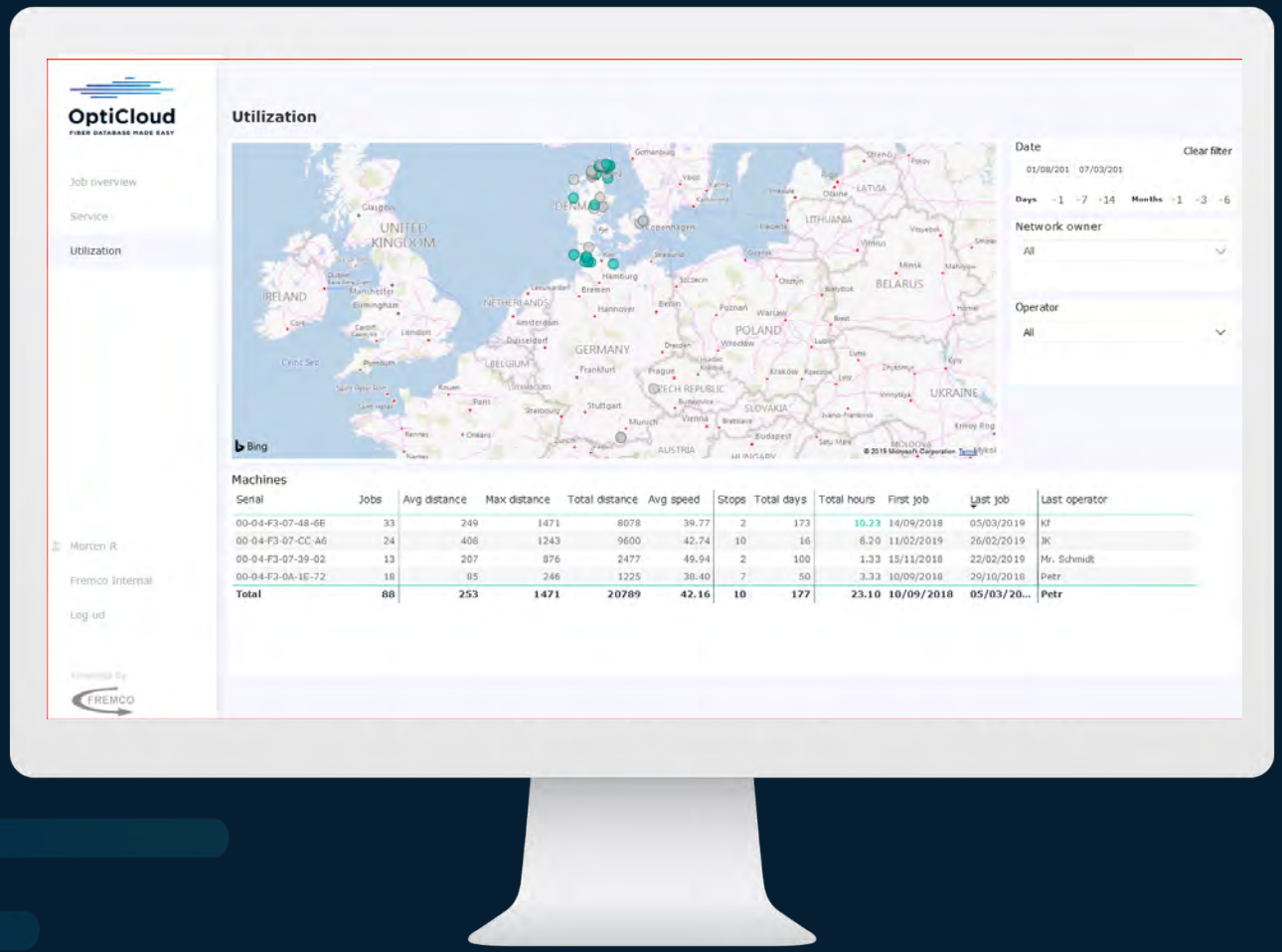
Service Overview



OptiCloud

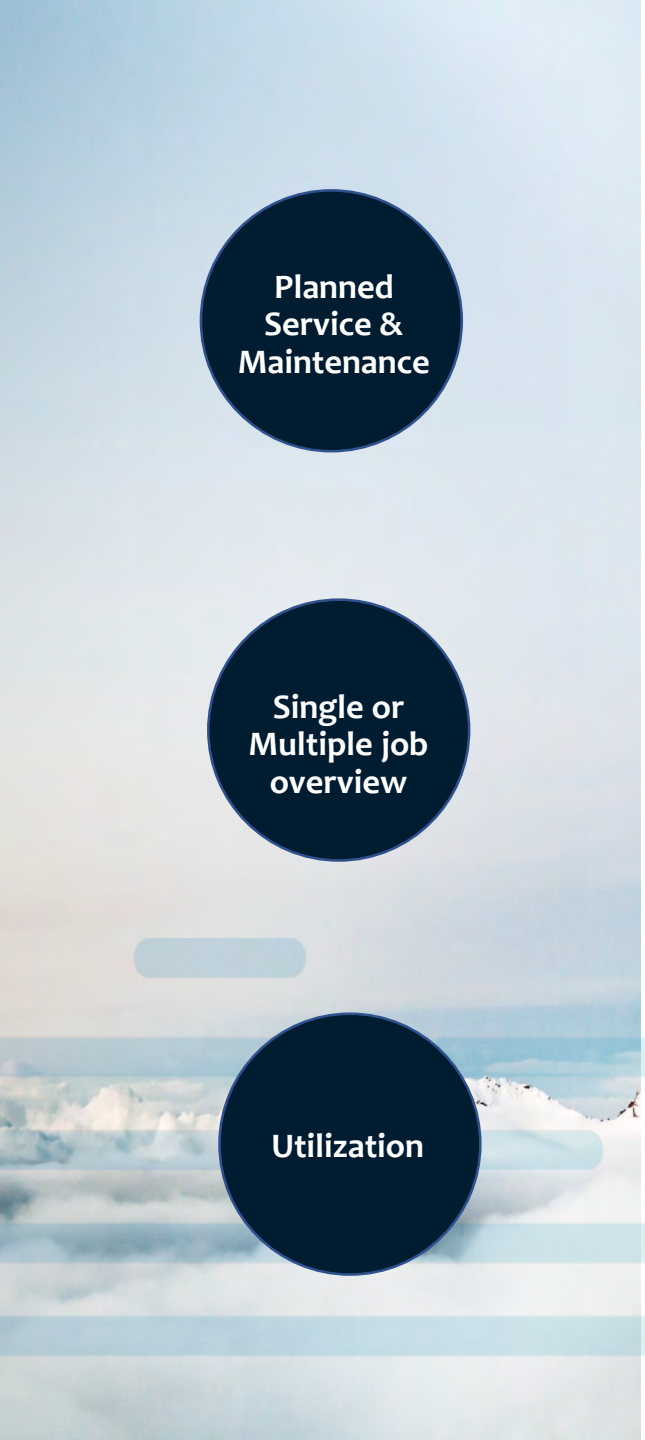
Powered by Fremco

Utilization Overview



Serial	Jobs	Avg distance	Max distance	Total distance	Avg speed	Stops	Total days	Total hours	First job	Last job	Last operator
00-04-F3-07-48-6E	33	249	1471	8078	39.77	2	173	10.23	14/09/2018	05/03/2019	Kf
00-04-F3-07-CC-A6	24	408	1243	9600	42.74	10	16	8.20	11/02/2019	26/02/2019	JK
00-04-F3-07-39-02	13	207	876	2477	49.94	2	100	1.33	15/11/2018	22/02/2019	Mr. Schmidt
00-04-F3-0A-1E-72	18	85	246	1225	30.40	7	50	3.33	10/09/2018	29/10/2018	Petr
Total	**88**	**253**	**1471**	**20789**	**42.16**	**10**	**177**	**23.10**	**10/09/2018**	**05/03/20...**	**Petr**

OptiCloud
Powered by Fremco

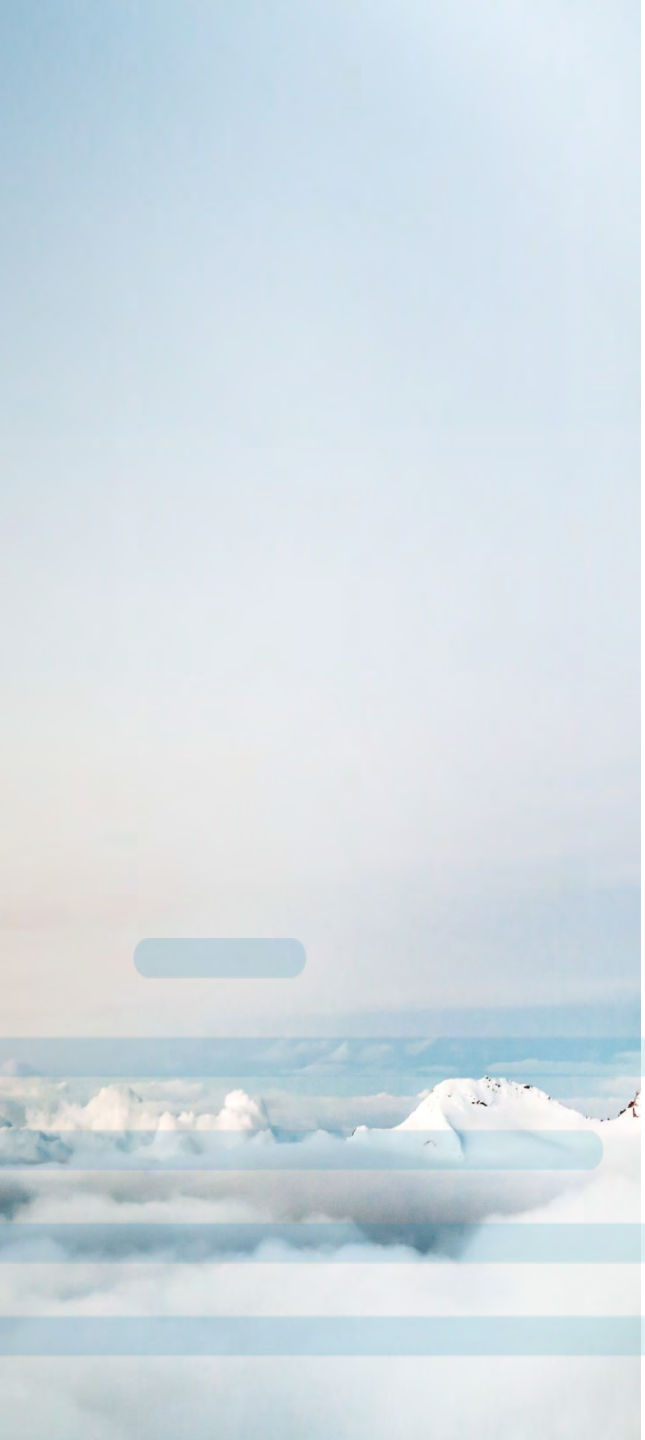


Instant Features

- GPS overview on job and location
- Service mail to customer and partner
- Detailed job overview across teams
- Historical data
- Basic utilization data

OptiCloud

Powered by Fremco

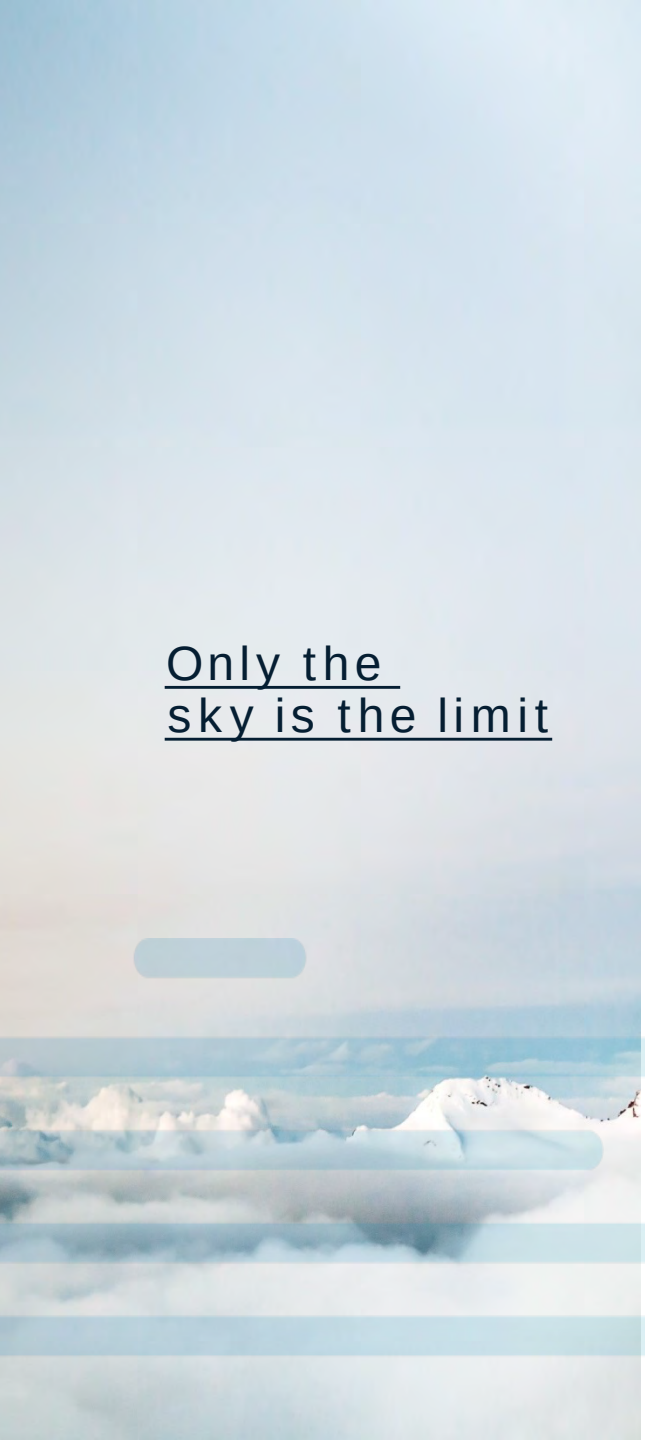


Instant Benefits

- Increased DATA security – PDF vs. Cloud (no manipulation)
- Instant and correct data
- Intelligent quality analysis across suppliers and brands
- Individual adaptation
- Cost savings
- Error elimination
- Plan for upgrading of skills
- Planned service and maintenance of the machines

OptiCloud

Powered by Fremco



Only the
sky is the limit

Future Possible Solutions

- Possibility to provide data from all suppliers
- Push out jobs to the machines
- Project progress status
- Analysis of duct and cable performance by manufacturers
- Benchmarking
- Intelligent recommendation of fiberblowing parameters
- Usage of historical data for submitting new tenders
- Etc.

OptiCloud
Powered by Fremco


Thank you for your time!
Visit us at:
www.fremco.dk
FREMCO