Underwriter presentation 2023

21 February 2023

AVINOR

Agenda

Avinor

Mandate and regulatory framework

Traffic and recovery from Covid-19

Future Avinor

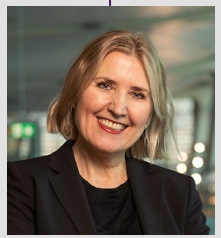
Air navigation services and drones

Safety

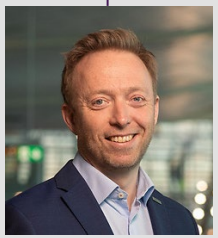
Group Management

CEO
ABRAHAM FOSS

EVP STRATEGY &
CORPORATE GOVERNANCE / CFO
PETTER JOHANNESSEN



EVP ORGANISATION &
CORPORATE SUPPORT
MARI HERMANSEN



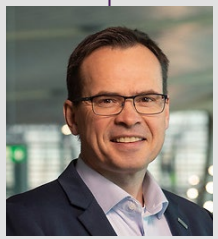
EVP COMMUNICATION
JOHN-RAGNAR AARSET

EVP MAJOR
AIRPORTS
STINE R. WESTBY

EVP NATIONAL,
REGIONAL & LOCAL
AIRPORTS
ANDERS KIRSEBOM

EVP AIR NAVIGATION
SERVICES
JAN GUNNAR PEDERSEN

EVP COMMERCIAL
JOACHIM LUPNAAV JOHNSEN



EVP SUSTAINABILITY, CONCEPT
& INFRASTRUCTURE
DEVELOPMENT
THORGEIR LANDEVAAG

EVP IT & TECHNOLOGY
LARS VÅGSDAL

Organisation

CEO

STRATEGY & CORPORATE GOVERNANCE

COMMUNICATION

ORGANISATION & CORPORATE SUPPORT

MAJOR AIRPORTS

NATIONAL, REGIONAL & LOCAL AIRPORTS

AIR NAVIGATION SERVICES

COMMERCIAL

SUSTAINABILITY, CONCEPT & INFRASTRUCTURE DEVELOPMENT

IT & TECHNOLOGY

Key facts

43 airports

3 Air Traffic Control centres

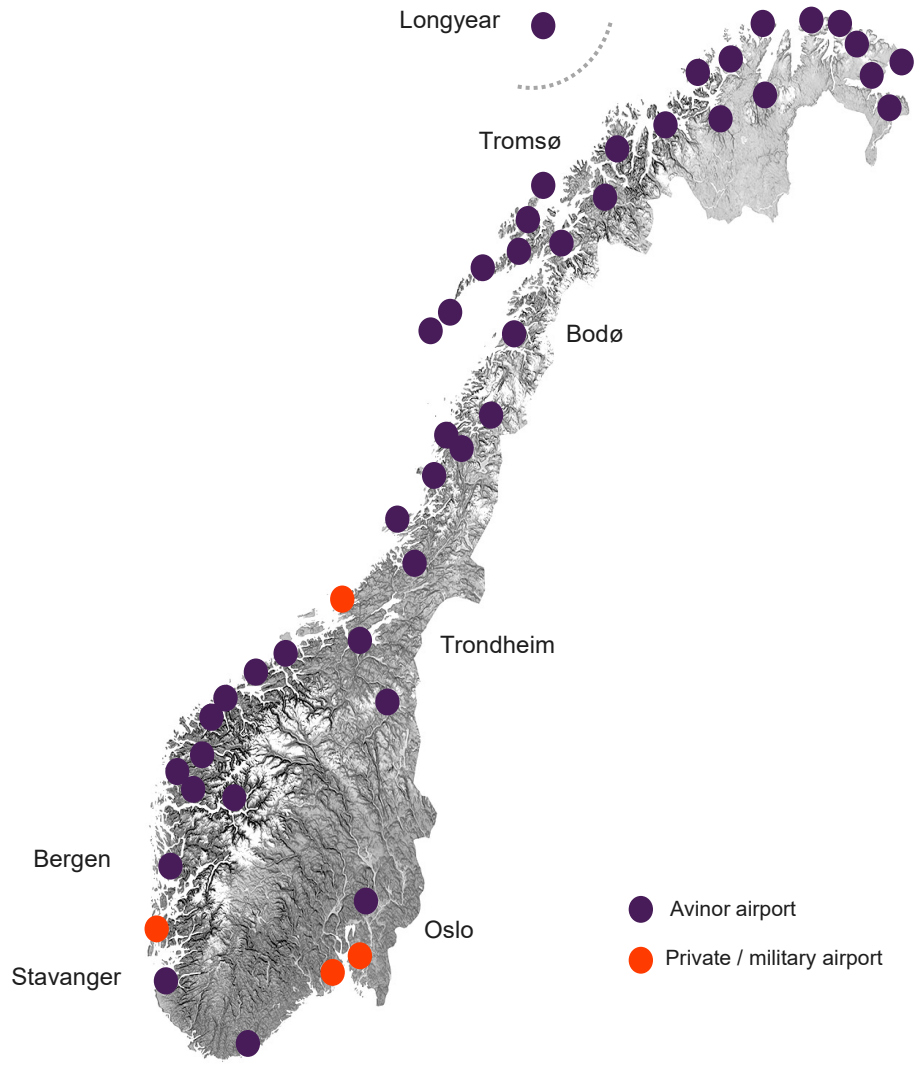
1 Remote Tower centre

Revenue NOK 10 bn. (2022)

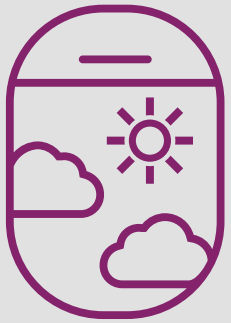
Total Assets NOK 45 bn. (2022)

CAPEX NOK 4 bn. annually

2 800 employees



Activity level at Avinor airports and airspace in 2022



44 million passengers

Domestic: 27 million
International: 17 million

619 000 commercial aircraft movements

Domestic: 466 000
International: 153 000

Overflights: 70 000

Oslo Airport, Gardermoen

22.5 million passengers - highest in the Nordics

Most punctual airport for on-time departures

Strategic goals towards 2025

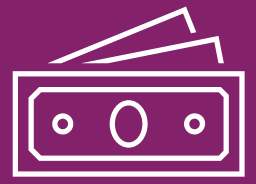
Operational safety

Sustainable aviation

Technology driven and efficient

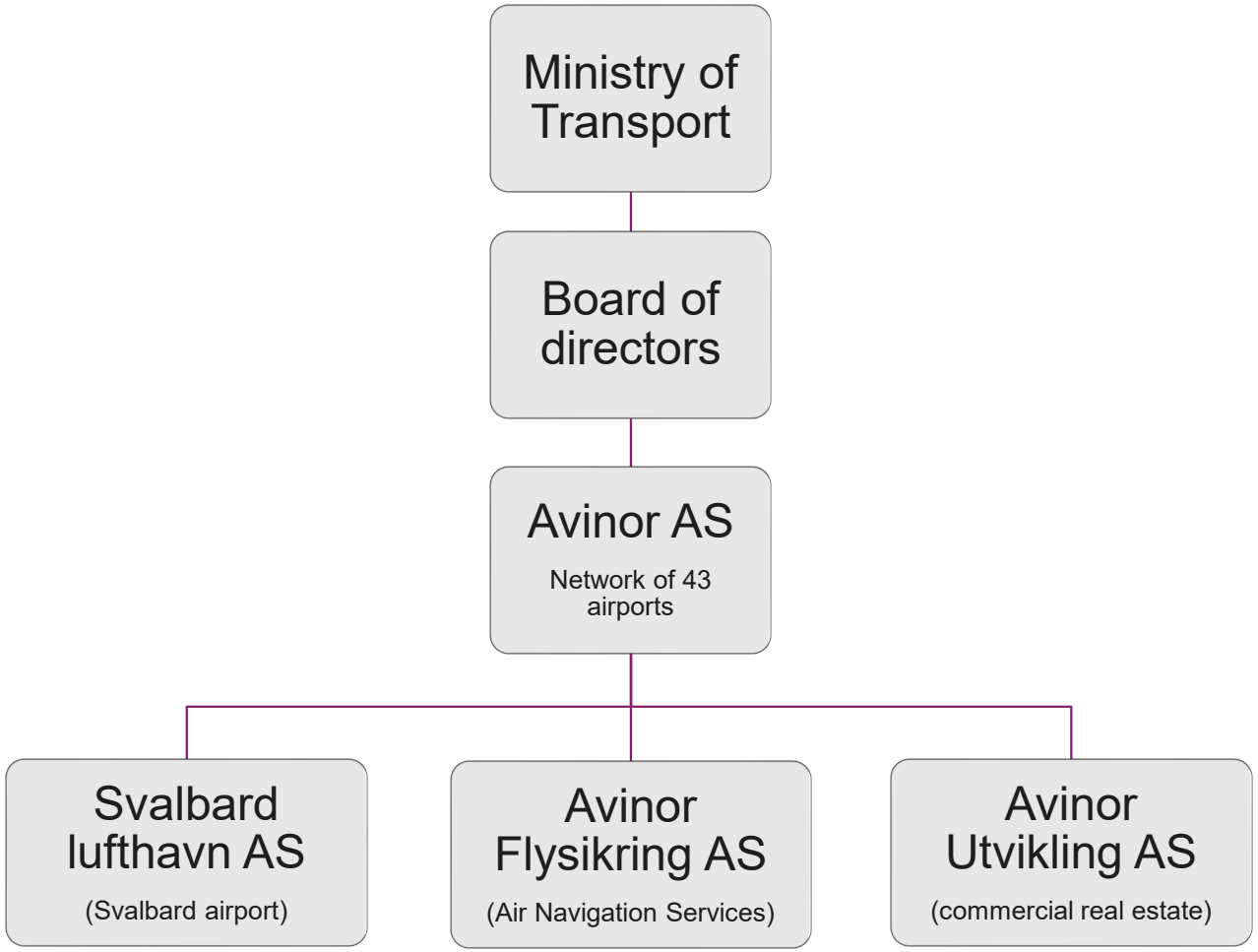
Customer focus

Attractive employer

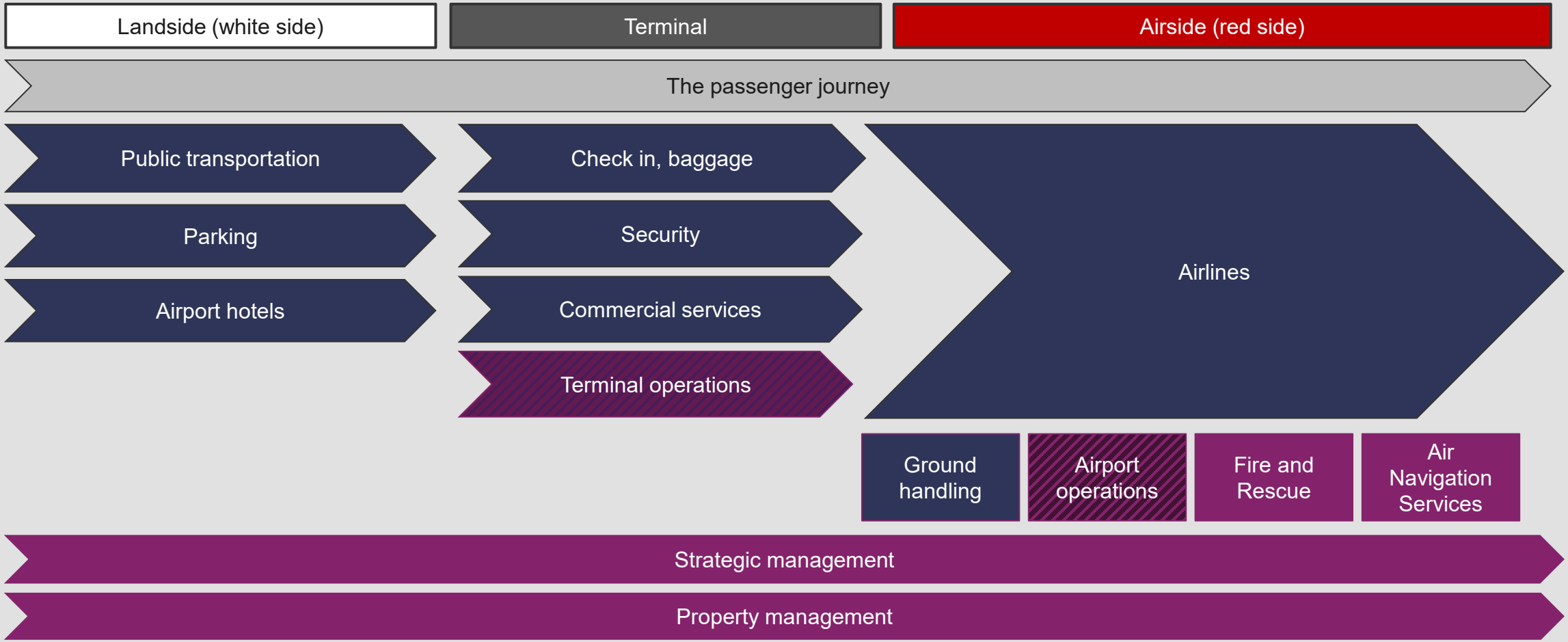


Financially Sustainable

Ownership and legal structure



Airport value chain



Ownership policy

The Norwegian state has two ownership categories with specific goals

Category 1
Highest possible return in a sustainable manner

Category 2
The most sustainable and efficient possible attainment of public policy goals

Examples

DNB
Equinor
Flytoget
Norsk Hydro
Statkraft

Avinor
Bane NOR
Statnett
Statskog
Gassco

The Ministry of Transport - Both regulator and sole shareholder

Shareholder objectives	Avinor serving both civil and military operations	Safe, efficient and sustainable operations	Financial profitability, capital structure and dividends
Regulatory	Airport charges single-till principle	ANS charges Single European Sky performance scheme	Other operational regulations e.g. safety, security

AVINOR

Financial support from Norwegian State during COVID-19

Waiver
Equity ratio requirement waived until Dec-2023

NOK 7.4 bn.
Direct financial grants

NOK 440 mill.
No instalments in 2020 on state loan

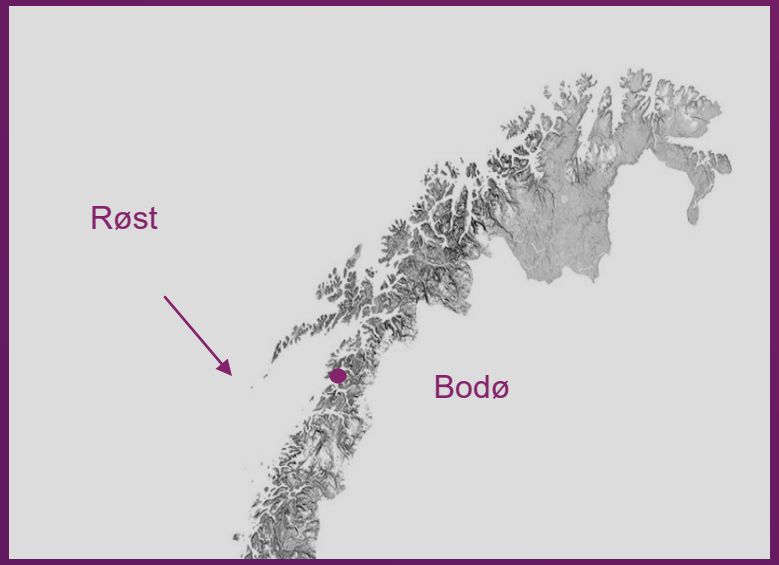
No dividend
for
2019 - 2021

Norway is a country of long distances and challenging topography

Population 5.5 million
Coastline 2 532 km

Airports and air navigation services are **key national infrastructure**

Aviation is key national infrastructure – a glimpse from Røst, an island with 550 inhabitants



Traffic recovery continued in 2022

Larger recovery in movements than passengers

Offshore traffic relatively stable

Traffic volume 2019 - 2022

Traffic volume	2019	2020	2021	2022	% change 22 vs. 19
Passengers (in millions)					
Total	54.1	20.4	22.4	44.7	-17%
Domestic	30.7	14.8	17.2	27.1	-12%
International	22.8	5.0	4.7	17.0	-25%
Offshore	0.59	0.51	0.54	0.55	7%
Movements (in thousands)					
Total	679	428	463	619	-9%
Domestic	444	322	360	426	-4%
International	193	66	64	153	-21%
Offshore	42	41	39	40	-5%
Freight and mail (in thousand tons)	214	199	219	198	-8%
Overflights	78 700	36 400	47 100	69 600	-12%

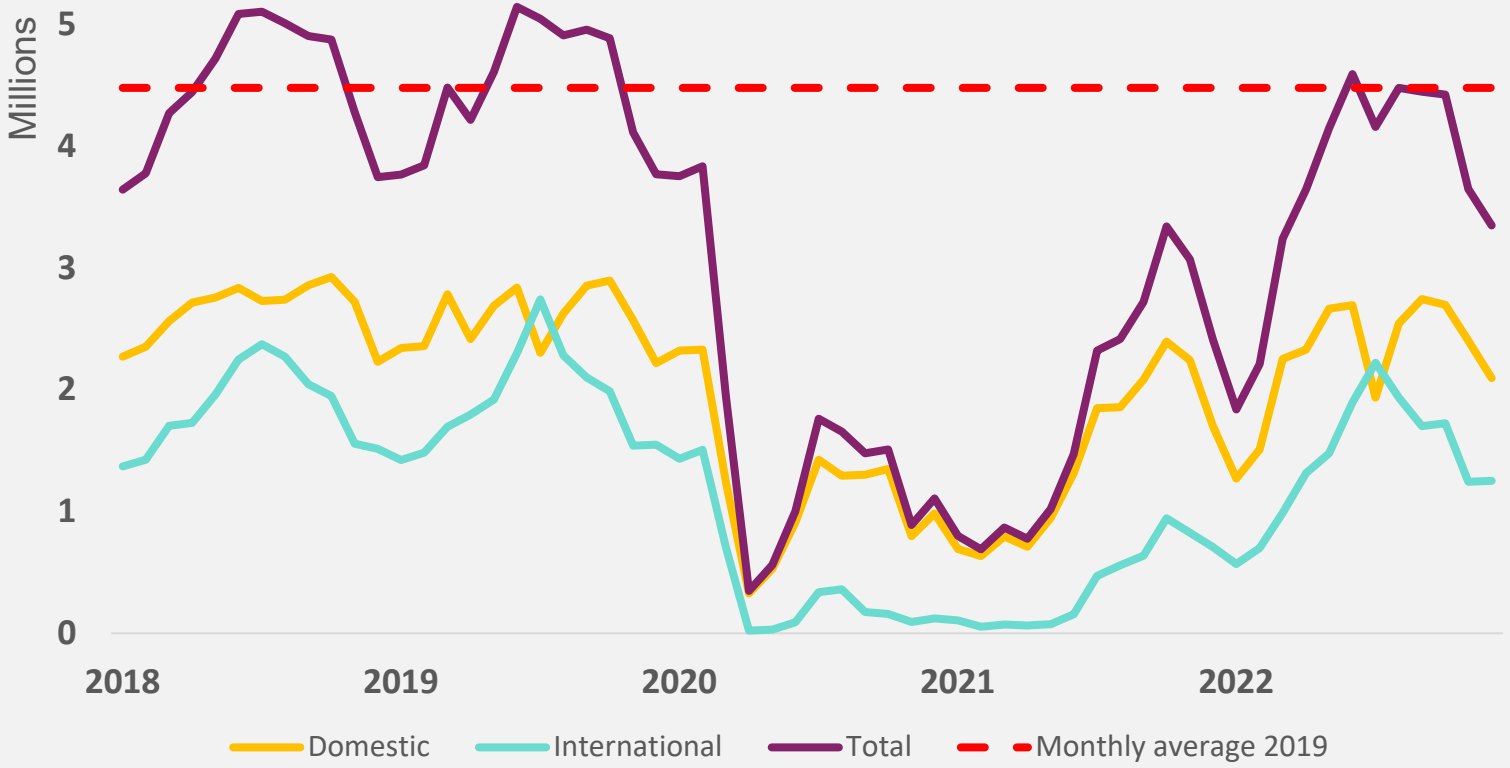
Monthly passenger volume

January 2018 – December 2022

Faster recovery in domestic than international traffic

Russian invasion of Ukraine

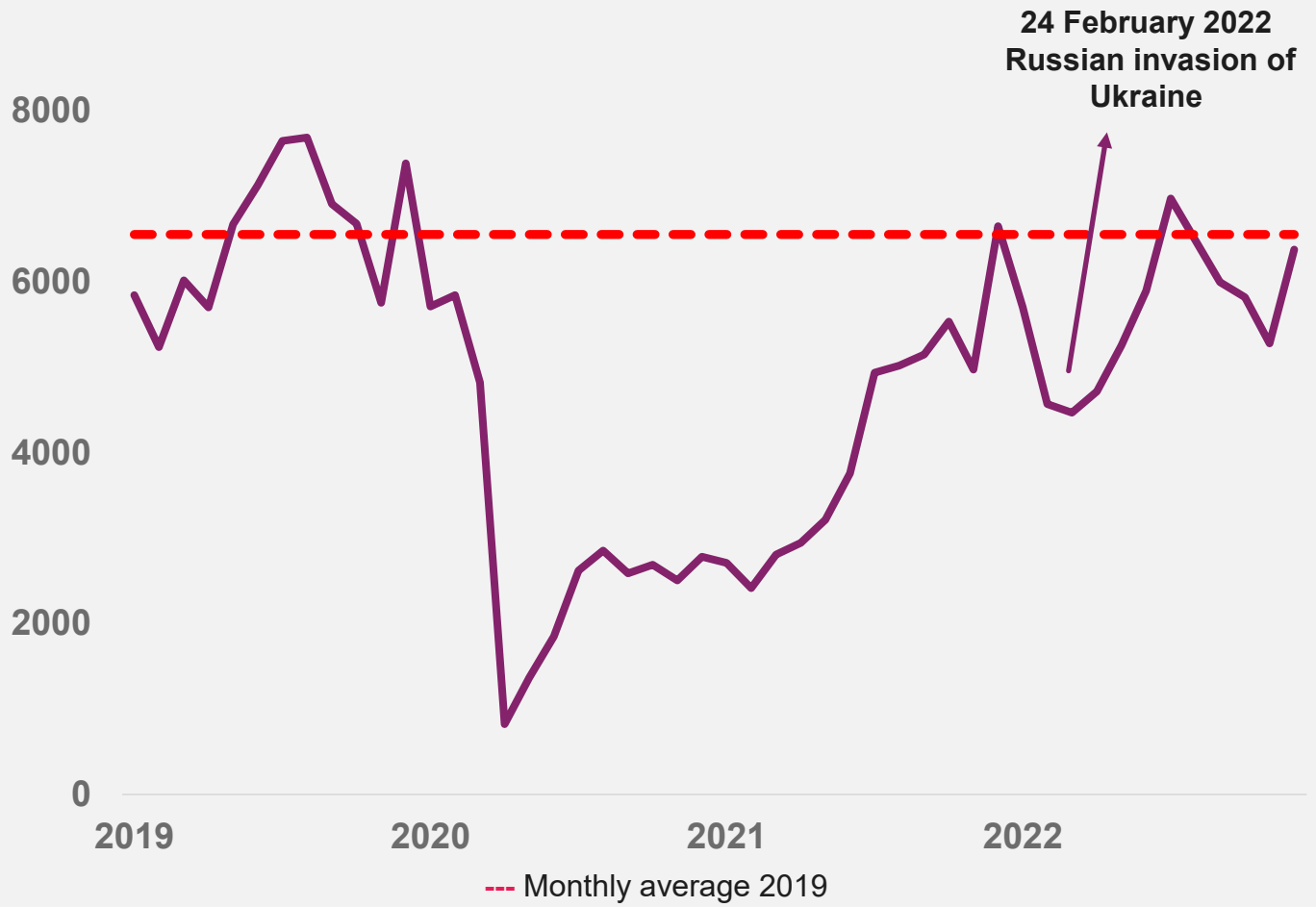
- No impact on domestic passenger volumes
- Limited impact on international passenger volumes



No long-lasting negative impact on overflights of Russian invasion of Ukraine

Monthly overflights in Norwegian airspace

January 2019 – December 2022

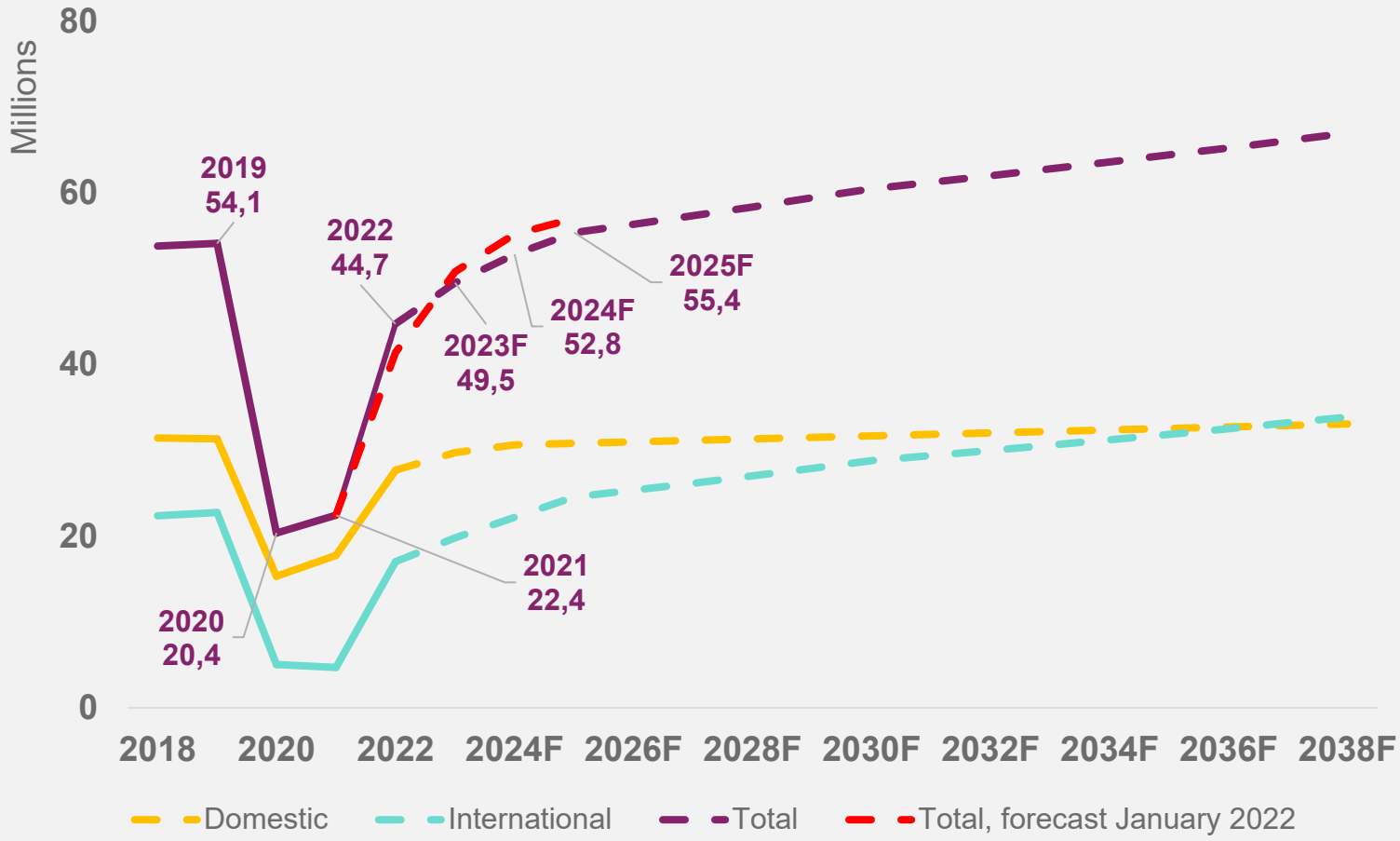


Forecasted passenger volumes

2018 – 2022. Forecasts until 2038

Passenger volumes expected to recover to 2019-levels during 2025

Forecasts for 2023 – 2025 are slightly lower compared to last year's forecast



COVID-19 impact and recovery

NOK 16 bn.
Loss of revenues
2020 - 2022

NOK 10 bn.
Revenue 2022
Down 2 bn. vs. 2019

- 17 %
reduction in passengers
2022 vs. 2019

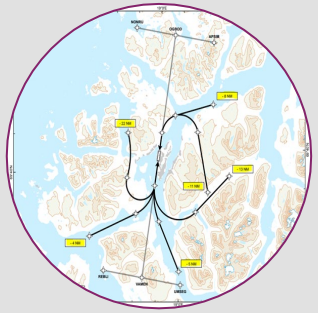
2 new airports
9 remote towers

Sustainable aviation

Sustainable Aviation Fuel (SAF)

Offered in Oslo since 2016

Norwegian aviation aligned with EU on proposed SAF blending mandate for fuel. 2% in 2025, 5% in 2030, further increase towards 2050



Airspace efficiency

Estimated CO2 reduction of appx. 12 000 - 20 000 tonnes annually (and noise reduction)

Fuel savings for airlines estimated at NOK 70 – 90 millions annually

Ambition to make air traffic fossil-free within 2050

Fossil-free aviation is critical for future mobility in general

Avinor fossil-free within 2030 (bio-fuel and electrification)

Electrification of aviation

Ambition to achieve hybrid or fully electrified passenger aircraft by 2026/2027

Projects

New terminal Tromsø

Expected completion in January 2024

10 000 sq. meters

Investment NOK 971 million

Replacement of baggage handling system at Oslo Airport

Completion autumn 2025
Total cost ~ NOK 2.3 bn.

New airport Mo i Rana

Financed by Norwegian state and local support

Estimated opening in 2027

New airport Bodø

Financed by Norwegian state, Bodø municipality and Avinor

Avinor will contribute appx. NOK 2.6 bn

Estimated opening in 2029/2030

Air Navigation Services

Tower operations

Air Traffic Control (ATC) is provided at large and regional airports

Aerodrome Flight Information Service (AFIS) is provided at Remote Tower Centre and at regional and local airports

Area Control

Polaris ACC: one unit, three locations, four sector groups

- North (Bodø)
- West (Stavanger)
- East (Oslo/Røyken)
- TMA (Oslo/Røyken)

Certified in accordance with (EU) 2017/373, valid from 17 December 2020 and other applicable regulations

Certificate number NO.ATM/ANS.0002 – Issue 3, date of issue: 27 January 2022

AIS/NOTAM

Avinor is responsible for AIS/NOTAM services in Norway

FAS – Future ATM System - Programme

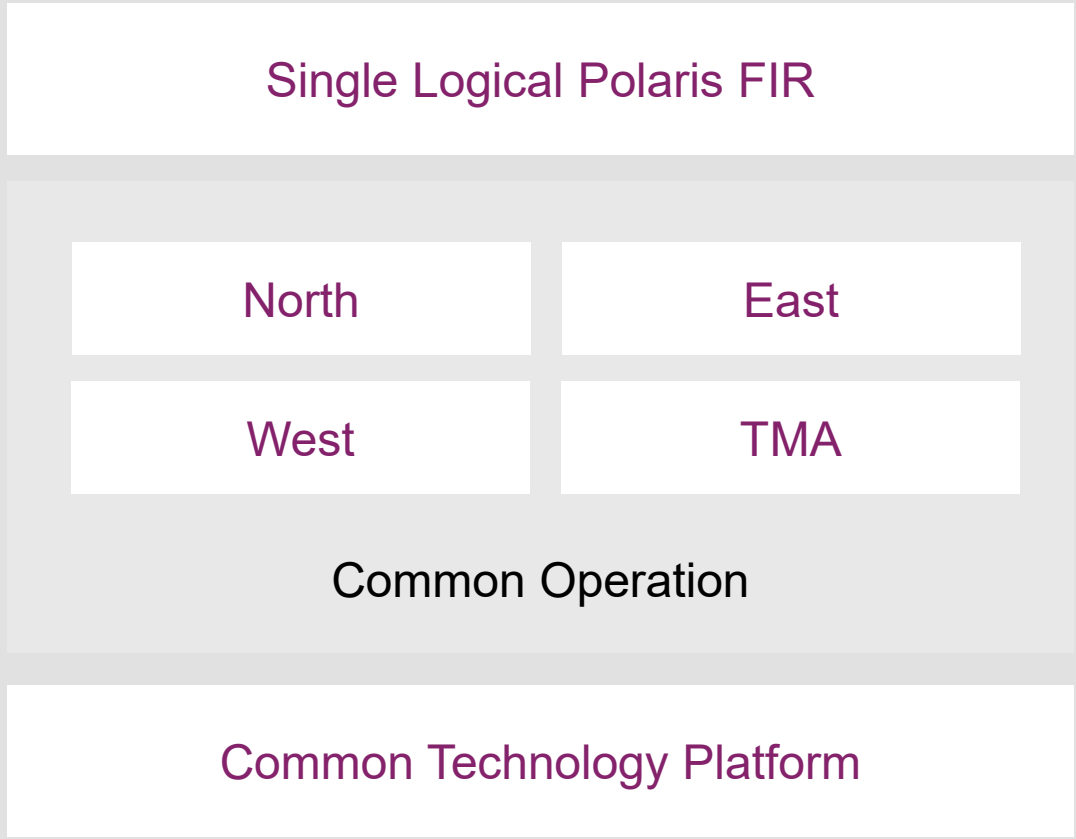
Avinor is investing in an effective and future orientated ATM system for Polaris ACC

Signed Contracts:

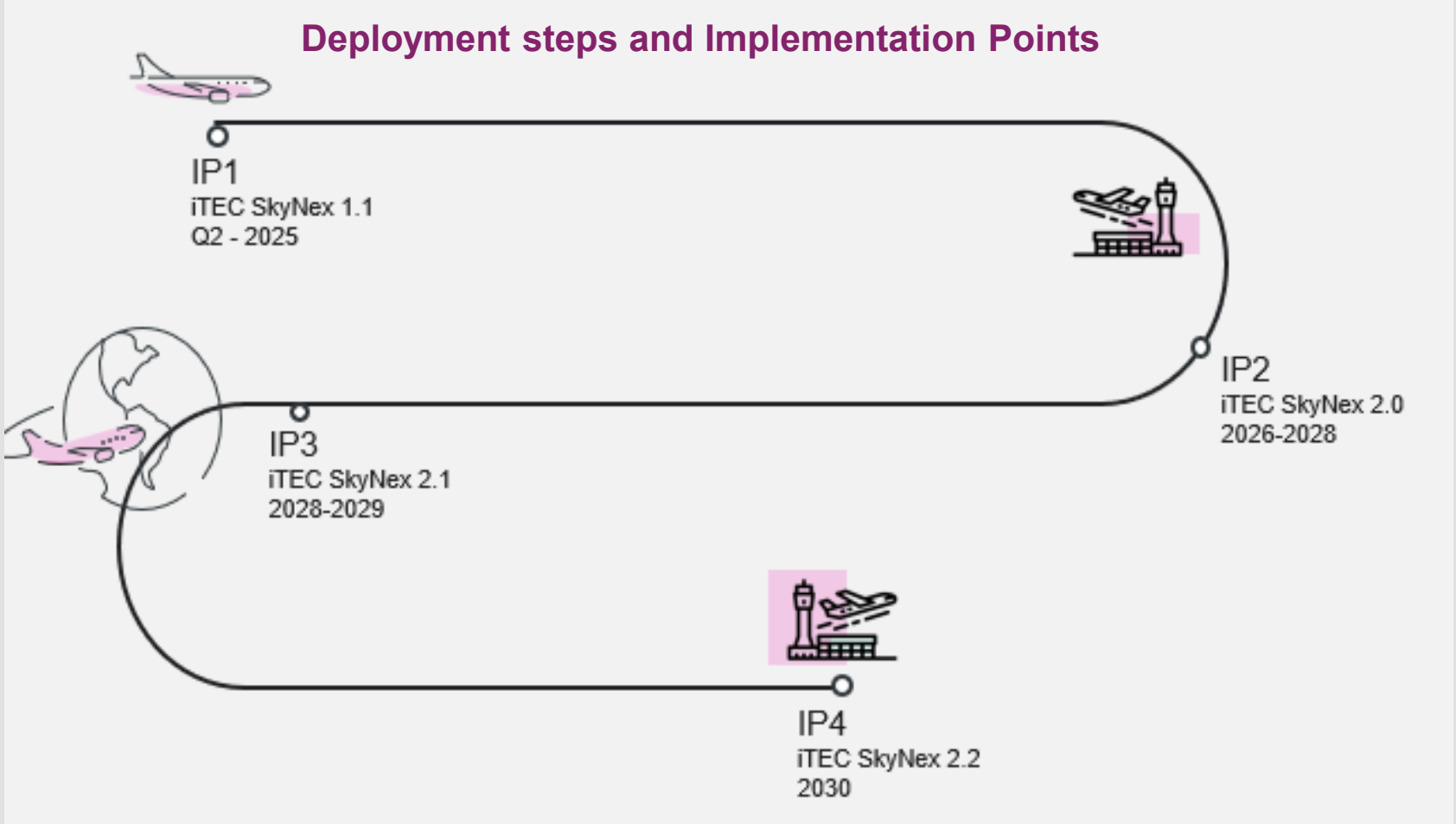
- Avinor is a member of the iTEC alliance
- Deployment contract with Indra to deploy iTEC SkyNex 1.1 in Southern Norway 2025

Deploying SESAR concepts

- Conflict detection
- Trajectory Based Operations
- Higher degree of automation
- The foundation for considerable efficiency at European level

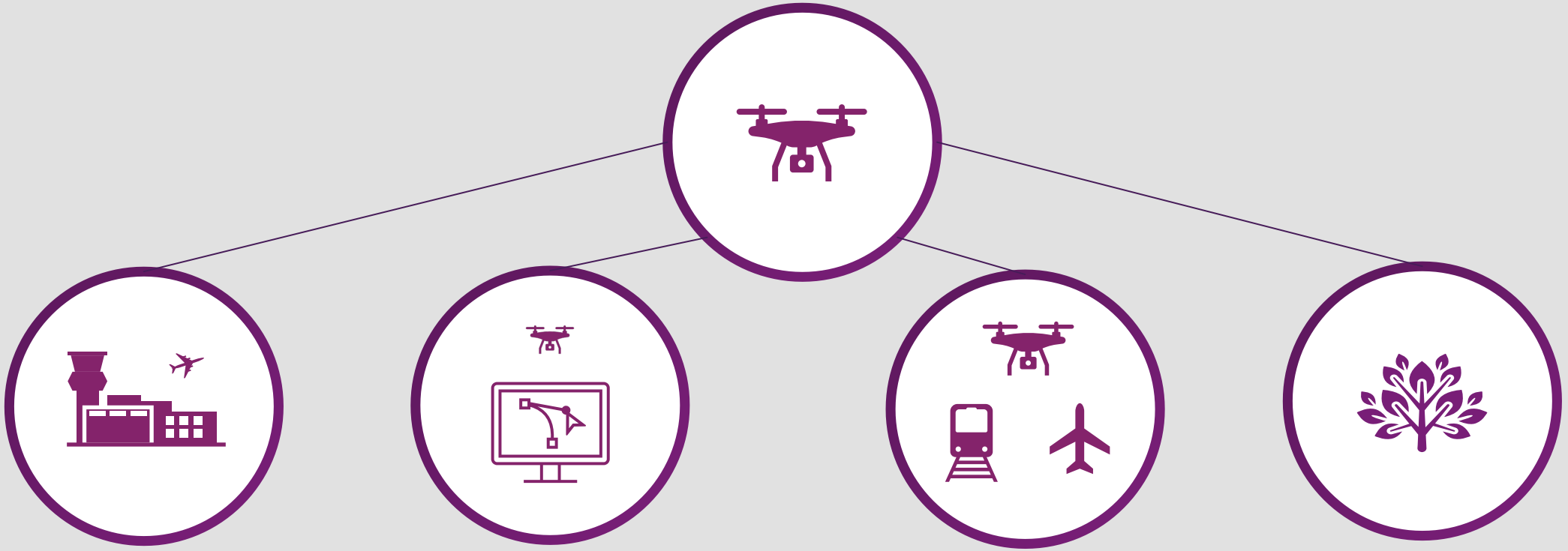


iTEC SkyNex Functional roadmap – Deployment strategy



Drones and Advanced Air Mobility

- a vital part of Avinor's strategic scope



Existing and new infrastructure

Safe integration of drones in and around airports. Adapt existing and consider new to serve AAM

New technology

Proactively develop internally and together with existing and new partners

Integration of autonomy

Integrate UTM and ATM as well as operational integration across different platforms of autonomy and communication platforms

Sustainability

Licence to grow!

Key areas for Avinor

Integration of drones in the airspace – UTM.

Digital systems for the large volumes of drones in the future

Infrastructure

Adapt/adopt infrastructure to provide for drones / eVTOLs / AAM

Own Use

Make use of drones in airport operations to reduce cost and enchance security

C-UAS (detection)

Maintain safe and efficient operations

Avinor Drone Program

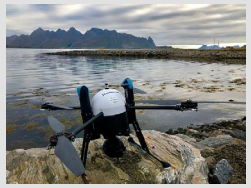
Avinor – an active contributor in developing the next chapter in aviation

The Norwegian Government points at Avinor to be provider of information services in drone traffic handling

Milestones for Avinor

2018 — Drone Program created - UTM

2019 — Fence inspection project at Svolvær



2019 — RFI UTM

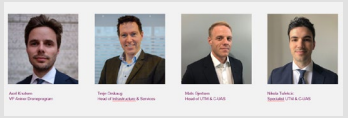
2020 — Signed UTM contract with Frequentis

2020 — Autonomy light inspection project at Kjevik

2020 — UTM operational at 17 airports

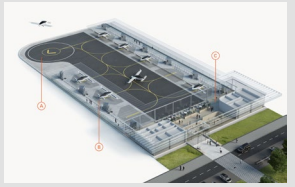
2020 — UTM operational at first airport

2021 — Drone Program expansion; UTM, C-UAS, Infrastructure, Own use



2021 — Interpol exercise for C-UAS at Gardermoen

2022 — RFI for vertiports



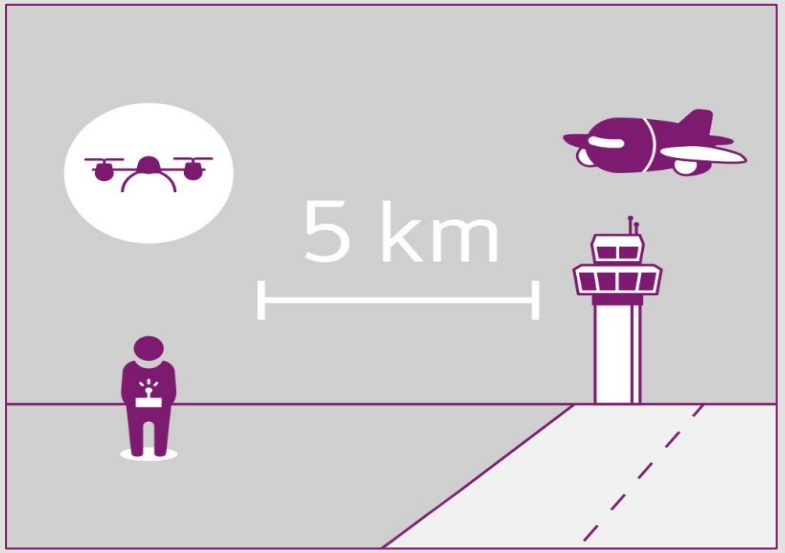
2022 — RFI for C-UAS

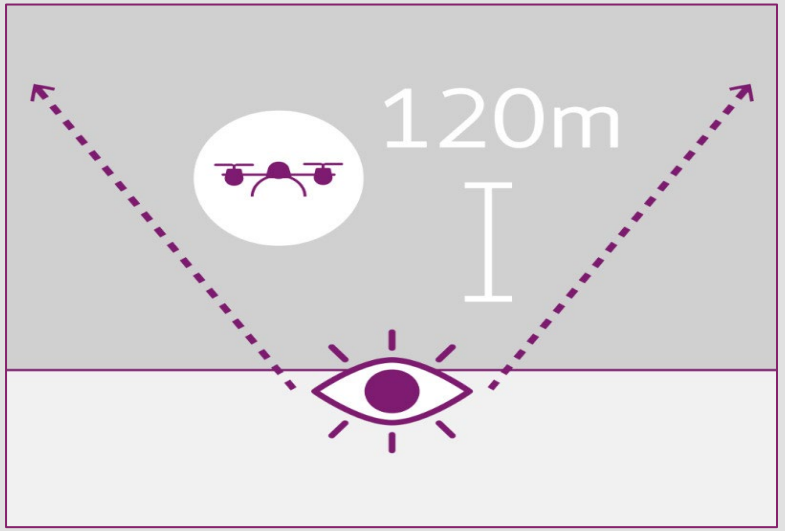
2022/2023 — C-UAS operational at more airports in Avinor

2022 — C-UAS operational at Gardermoen

Drones

- Regulations under the Norwegian Aviation Act concern aircraft without a pilot on board
- **Avinor has acquired drone detection technology** to monitor illegal drone operations
- Avinor will press charges against drone operators that are within the 5 km radius of the airport (without permission)
- Commercial drone operators must complete specific training and obtain mandatory drone insurance for passenger and third-party liability
- **Avinor has implemented an UTM system across Norway**. The system provides drone operators with access to airspace, relevant operational information, and digital communication with ATC.
- **Avinor aims to provide expanded UTM services in Norway**, both on- and offshore, as well as in the enroute sector





Avinor Remote Towers

Supplier of the technical solution is Kongsberg Defence & Aerospace

Main Remote Tower Center (MRTC) – a new building at Bodø airport. Operational since May 2022

MRTC operational with 9 airports by beginning of 2023

Remote Tower airports	Next airports in line
Røst (2019)	Sogndal (2023)
Vardø (2020)	Førde (2023)
Hasvik (2020)	Molde (2024)
Berlevåg (2020)	Leknes (2024)
Mehamn (2022)	Sandnessjøen (2024)
Røros (2022)	Kirkenes (TBD)
Rørvik (2022)	
Namsos (2022)	
Svolvær (2023)	

NORWAM – **No**rwegian **R**adar, **WAM*** and ADS-B** Implementation Program

Aim

End of life for a number of conventional radars, which will not meet new operational requirements for surveillance

Reduce costs related to implementation
and maintenance on surveillance equipment

How

Safety analysis conducted – defining sensor types

OPS requirement, Business case.
Technical analysis, overall plan defined

Implementation of new technology including:

- 151 unique sites and 160 ground sensors
- Centralized processing system with backup of systems and technology
- Integration – with existing systems via ARTAS multi radar tracker
- Safety approval of new systems
- Training and operationalization

When

All planned WAM / ADS-B areas operational as of January 26th, 2023

Some gapfillers and warranty issues remain

Decommission of 3 radars planned during 2023

*Wide Area Multilateration
** Automatic Dependent Surveillance-Broadcast

Occurrence reporting

Avinor AS

Year	Reports	Serious incident/ accident
2016	5 106	1
2017	4 168	1
2018	4 406	1
2019	5 149	0
2020	3 160	1
2021	4 399	0
2022	3 840	0

Avinor ANS

Year	Reports	Serious incident/ accident*
2016	2 480	0
2017	2 441	0
2018	2 989	0
2019	3 221	1
2020	1 793	0
2021	2 208	0
2022	2 685	0

*Directly or indirectly contribution by Avinor ANS in accordance with EU Regulation 996/2010

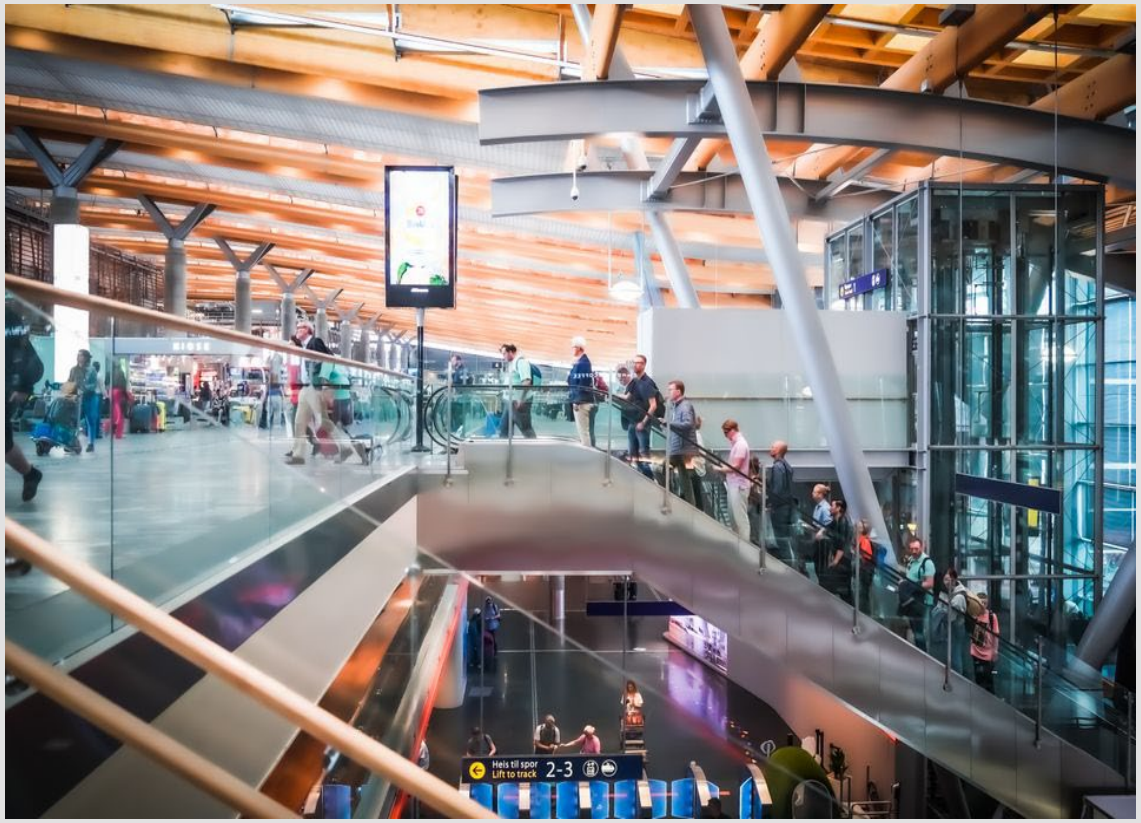
> The Avinor group has developed and implemented an integrated Safety, Security and Quality Management System to ensure that all activities and developments are performed in a planned and controlled manner

> Authority requirement that all airports and ANS shall be certified according to (EU) No 139/2014 and (EU) No 2017/373, respectively.

Cyber Security

- Avinor is **an active partner with the National Cyber Security Center (NCSC)** and collaborates closely on analysis and information sharing
- Avinor works closely with its suppliers, CERTs, neighbouring ANSPs as well as international working groups and organizations to improve the security resilience of the aviation community
- As required by EU 2017/373 ATM/ANS.OR.B.005, **Avinor has established a security management system**, ensuring the confidentiality, integrity and availability of operational data we receive, produce, or otherwise employ, to prevent unauthorized access and unlawful disruption of service
- As part of the management system, the change management process ensures that **any changes in Avinor are assessed to identify possible cyber security risks**
- A risk-based approach has been implemented to cyber safety **ensuring no unacceptable cyber security risk is imposed to safety in operations**
- Avinor has established our information security management system (ISMS) based on ISO 27001

Summary



Avinor has made a **strong recovery** since the COVID-19 crisis and has almost reached 2019 activity levels

Planned and ongoing projects will ensure Avinor is **prepared to meet future requirements** of the aviation industry and has a competitive offering for the aviation ecosystem

Avinor is **well positioned for the ongoing sustainable transformation** of Norwegian aviation

AVINOR

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Avinor AS

Dronning Eufemias gate 6, 0191 Oslo
P.O. Box 150, 2061 Gardermoen
Norway
www.avinor.no

Axel Knutsone/ Avinor Flysikring

AVINOR

NAIS Replacement and SWIM Implementation Project

Why

- NAIS (Norwegian Aeronautical Information System) end of life and being replaced with new solution
- Implement SWIM (System Wide Information Management) TI (Technical Infrastructure) and YP (Yellow profile) to meet Eurocontrols CP1 (Common Project 1) requirement
- Digital transformation journey to accomodate future AIS needs

Status

- Tender process to select vendor for new solutions ongoing. Target for contract Q2/2023

Implementation of new technology including

- Replace NAIS database (data for MET, ATS and AIM) and ~220 NAIS clients
- Integrate NAIS replacement with several systems (For example Eurocontrol, MET, IPPC)
- Implement new solutions for SWIM TI to publish and consume SWIM YP services
- Implement security based on Eurocontrols Common PKI (Public Key Information) program
- Safety approval of new systems planned
- Training and operationalization

Timeline

- Replace NAIS prior to end of support 31.12.2024 (Dialogue with vendor to extend to 31.12.2025)
- Implement SWIM TI and YP according to Eurocontrols CP1 requirements (Currently YP 31.12.2024 for TI and 31.12.2025)