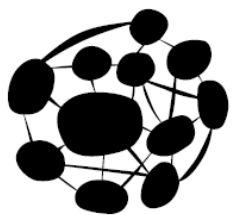


Presentation Comrod Communication

Treffpunkt Ryfylke – 17 Mars 2022



**NÆRINGS
FORENINGEN**

Gir kraft til vekst



COMROD

Reaching further

VELKOMMEN!





Sikkerhet

Gå aldri runct alene i Comrod lokalene hvis ikke annet er avtalt.
OBS! Uteområde er videoovervåket.



Personlig sikkerhetsutstyr

Følg de lokale retningslinjene for bruk av personlig verneutstyr.
Ved ferdsel i produksjon & uteområde skal synlighetsbekledning tas i bruk.



Avfallshåndtering

Sørg for at avfall håndteres riktig.
Er du i tvil ta kontakt med Comrod ansatte eller din kontaktperson.



Bilder & video

Hvis ikke annet er avtalt er det forbudt å filme eller ta bilder i og av produksjonen.



Røyking

Røyking er forbudt innendørs. Ved behov for røyking skal dette foregå utendørs på oppmerket område.



Besøkende identifikasjon

Vær vennlig å logge deg inn i vår besøkslogg v/ ankomst og ut når du går.
Besøksskiltet **SKAL** brukes og være synlig gjennom hele besøket



Brannalarm

Ved brannalarm evakuer bygget umiddelbart ved bruk av nærmeste nødutgang
OBS! Ikke benytt deg av heis



Evakuering

Møteplass ved evakuering er på parkeringsplassen ved hovedinngangen.
Hold deg i nærheten av din kontaktperson og vent på nærmere instruksjoner



Nødssituasjon telefonnummer

- Brann: 110
- Politi: 112
- Ambulanse: 113



Førstehjelp

Start med nødvendig førstehjelp og tilkall hjelp.
Vi har trent personell på huset som kan bistå i slike situasjoner.

WHO WE ARE AND WHAT WE DO

BUSINESS PROFILE

90%
DEFENCE INDUSTRY



10%
CIVIL MARKETS



COMRODS BUSINESS AREAS

ANTENNA SYSTEMS



MAST SYSTEMS



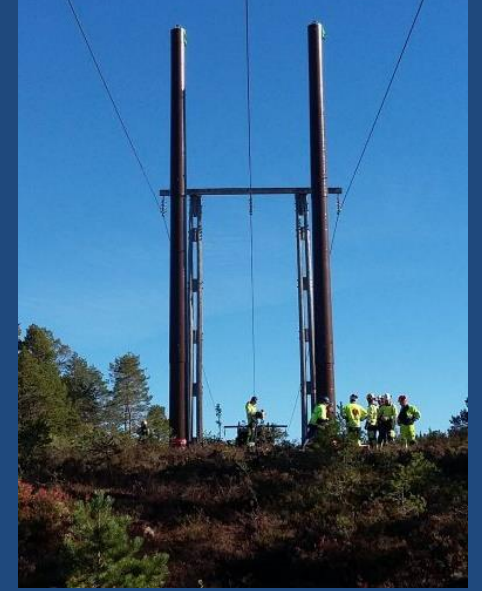
POWER SUPPLIES



MARINE ANTENNAS



UTILITY SYSTEMS



Our customers know us for innovative, high quality communication solutions and long-lasting products.



OUR VISION

- Product Performance
- Product Innovation
- Lead-time
- Supplier stability

Comrod owns the products and IP rights!



ORGANISATION – KEY POINTS



Sales

Strategic presence to ensures close relationship with customers

R & D capabilities

Strong focus – one of the most dedicated and focused “players”

Manufacturing

Control over all major critical activities internally

Multiple sourcing for standard raw materials

Design and manufacturing of critical workshop machines

SUSTAINABLE DEVELOPMENT GOALS



Comrod's sustainable development goals



HVORFOR JOBBER COMROD MED BÆREKRAFTS-MÅL?

*"We don't have
plan B because there is no planet B"*

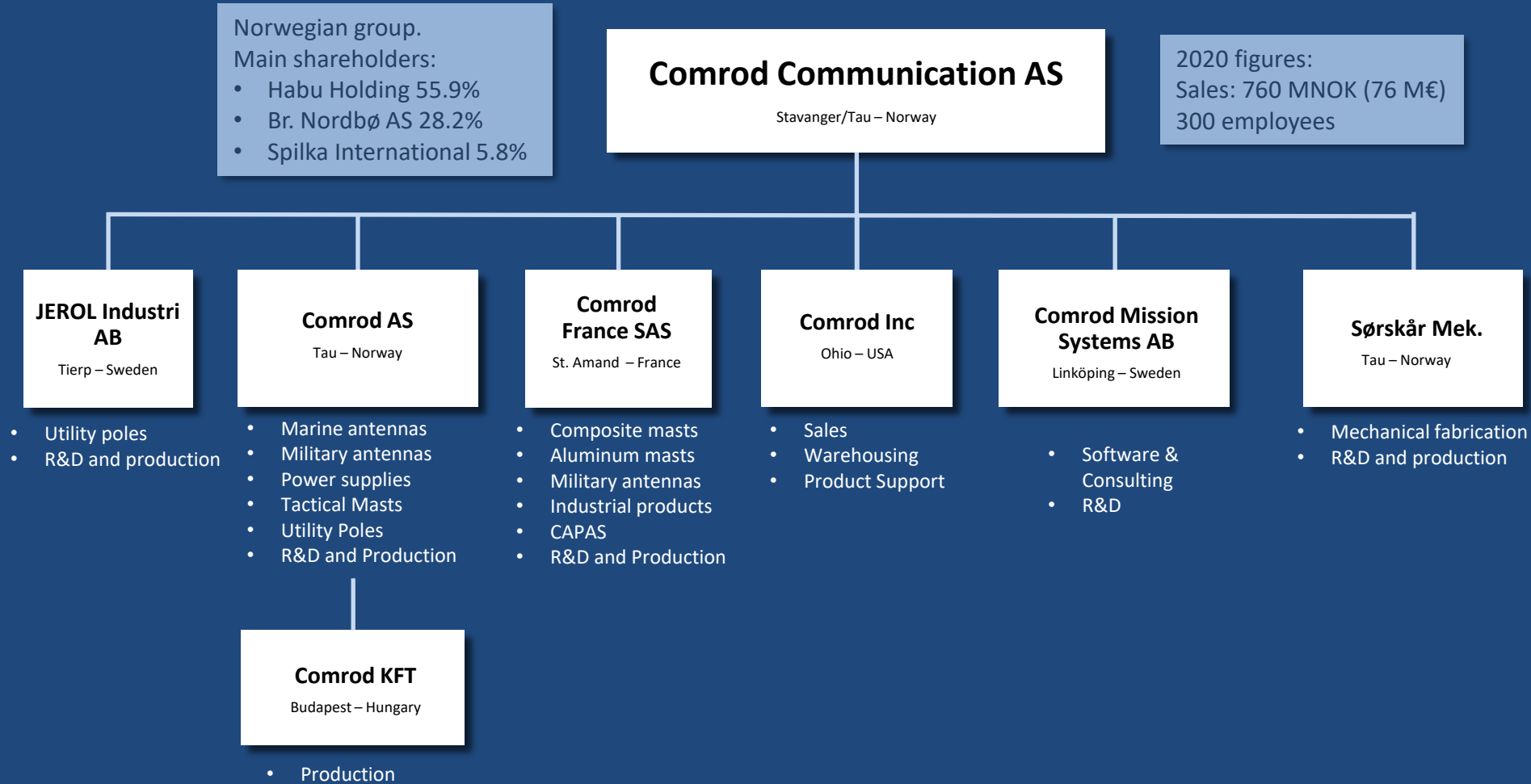
For felleskapet:

- Føre-var-prinsippet
- Kunde forventninger og krav
- Arbeidstaker forventninger
- Lønnsomt
- Konkurransefortrinn

*"Tiden er inne for å jobbe
proaktivt ikke reaktivt"*

KEY FACTS

COMROD COMMUNICATION GROUP STRUCTURE



LOCATIONS

NORWAY

HQ AND SALES, ENGINEERING
AND MANUFACTURING
TAU – STAVANGER
ASKER – OSLO

FRANCE

ENGINEERING AND MANUFACTURING
ST. AMAND LES EAUX

HUNGARY

MANUFACTURING
BUDAPEST

SWEDEN

SALES AND ENGINEERING
MORA

USA

SALES AND PROGRAM
MANAGEMENT
OHIO



Comrod Communication AS – Headquarters



COMROD AS

SØRSKÅR MEKANISKE
VERKSTED AS

Comrod Communication AS – Produksjonsanlegg i Frankrike (Comrod France SAS)



Comrod Communication AS – Produksjonsanlegg i Tierp (Jerol Industri AB)



COMROD COMMUNICATION AS

APPROX **350**
EMPLOYEES

15-20%
DEDICATED TO
RESEARCH & DEVELOPMENT



MNOK 760

TURNOVER 2020

QUALITY SYSTEMS

Comrod operates all its manufacturing sites in accordance with the internationally approved quality scheme ISO 9001:2015 and ISO 14001: 2015



EN ISO 9001 : 2015



EN ISO 14001 : 2015

COMPANY HISTORY

COMPANY HISTORY AND SELECTED MILESTONES

+70 years
composite
experience

1948
Estab.

1949
Steel
fishing
rods

1953
Fibreglass
fishing rods


1969
Military
antennas

1960
Maritime
antennas

1982
Broadband
antennas

1990 
First int. defense
contract with
Sweden

1997 
Defense
contract
Switzerland

1998 
Contract MRR-radios
Norwegian Armed Forces

2002 
Antennas for
British Armed
Forces

2003 
Stealth VHF/UHF
Antennas and systems
for Visby Corvettes

2004 
Defense contract
Switzerland

2006
Power Supplies, Battery
Chargers and Composite
Masts


2007 
Agreement Harris Corp.
For tactical antennas

2010
Comrod Inc

2010 
JP2072 contract Australia

2011
Aluminium
telescopic
masts

2015 
Contract Mars
Rover 2020
FFI/NASA

2015 
Contract submarine
A-19 & A26 – Sweden

2017
Comrod
Mission
Systems

2018 
Large antenna
contract
US Army

2018
Comrod
Utility
Systems

2020
Sørskår
Mekaniske
Verksted AS

2021
Jerol

ANTENNAS OVERVIEW

- **Vehicle** whip and loop antennas covering HF, VHF & UHF applications for communications & jamming
- Comrod **dual, tri-band and quad-band** antennas provide up to four antennas integrated into one. Save space on the vehicle
- HF vehicle mounted full loop antenna for **On-The-Move (OTM) HF** communications
- **Portable and manpack antennas** are provided for a variety of dismounted applications
- Comrod **wide band parabolic** and whip antennas power the “tactical internet” of the modern battlefield
- Comrod **marine antennas** help military and civilian customers communicate and navigate in some of the worlds toughest waters



ANTENNA FOR MARS ROVER 2020

- Antenna for Ground penetrating radar on the NASA Mars 2020 rover.
- Developed in cooperation with the Norwegian Defence Research Establishment (FFI)
- Take off 30th July 2020, Landed 18th February 2021



RIMFAX ground penetrating radar



MARS Perseverance



150-1200MHz GPR antenna

POWER SUPPLIES & BATTERY CHARGERS



ComPact 2400 AC/DC

Power Supply & Battery Charger

AC/DC – Input 99-276VAC / Output 28VDC (80A)



ComPact1200 Dual Input

Dual Input Power Supply & Battery Charger

DC/DC – Input 9-16VDC / Output 28VDC (40A)
AC/DC – Input 99-276VAC / Output 28VDC (40A)

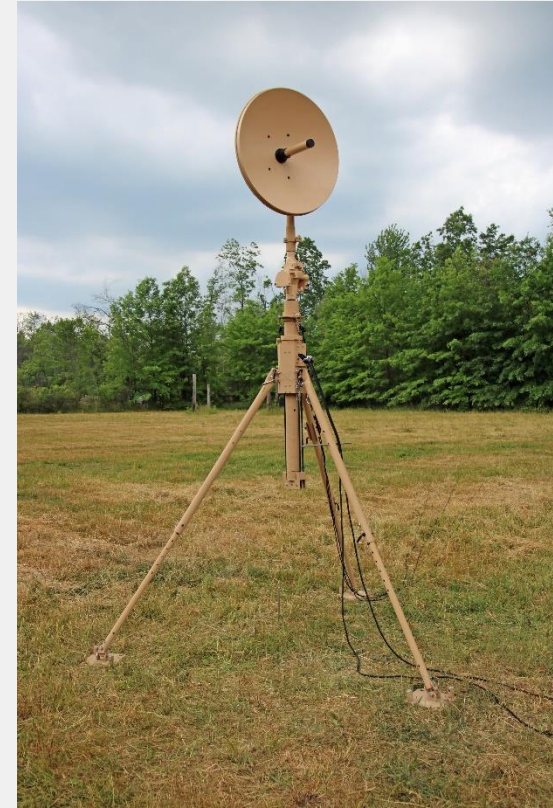


ComPact 2000 DC/AC

DC to AC Inverter

DC-AC - Input 18-34VDC
Output 120/230VAC pure sine, 50/60Hz, 2000VA

ANTENNAS AND MAST SYSTEMS



SURVEILLANCE MASTS

- Composite and Aluminium masts available
- Supports On-The-Stop and On-The-Move operations
- Short nested length vs. deployed height for constrained spaces
- High stability design supports most sensor and surveillance applications
- Deployment in steeply sloping terrain
- Off-the-shelf systems available
- Can be customized for optimal vehicle integration



ADVANCED SUBMARINE ANTENNA SYSTEMS

- Complete antenna and control systems
- Integration of radio systems
- Interfaces to integrated communications systems
- Broad product / frequency range
 - HF 1.6-30 MHz
 - VHF/UHF 30-3000 MHz
- Tuneable VHF and HF antennas
- Customised solutions



COMROD REFERENCES IN THE USA



VHF302600TB Antennas on US Marines Amphibious Combat Vehicle (ACV)



HF230L-OTM HF Loop Antenna. Below HIMARS



VHF30512CEF Antennas on MRAP



COMROD UTILITY POLES

- Single mast, H-mast, A-mast or trippel mast
- Solutions for 22-132 kV
- Complete system solution, including monitoring system
- Minimized footprint - HMS







CURRENTLY THE BIGGEST PLAYER IN EUROPA



SØRSKÅR MEKANISKE VERKSTED AS, A COMROD COMPANY

BUSINESS AREAS:

- Aluminium, acid-proof steel, plastic and buoyancy
- Production:
 - Watercutting
 - CNC machining
 - Sheet metal work
 - Certified welding
 - Mounting og testing
 - Engineering
 - 3D lasercutting
 - 3D printers, plastic and metal

Offshore & Subsea	Havbruk	Landbasert industri
<ul style="list-style-type: none"> ▶ Nøkkelferdige spesialmaskiner ▶ ROV skidder ▶ Subsea buoyancy ▶ Transportbasket ▶ Subsea transport og løfteutstyr ▶ Subsea tools 	<ul style="list-style-type: none"> ▶ Førkanoner ▶ Førsiloer ▶ Fiskehåver ▶ Sorteringsmaskiner ▶ Vannavsiler ▶ Spesielsiler ▶ Vaskekar og vaskebenk ▶ Væskeskiller/Sediment 	<ul style="list-style-type: none"> ▶ Spesialmaskiner ▶ Bulk tank for lastebiler ▶ Beredskapstanker for drikkevann. ▶ Vanninntak til vannkraftverk ▶ Kontrollrom
		
<ul style="list-style-type: none"> ▶ Dører/spesialdører, ▶ Arbeidsbukker/tool stands ▶ Stativ, hyller og skap ▶ CNC maskinerte deler ▶ Spesialoverganger ▶ Avanserte sveiste konstruksjoner ▶ Arbeidsplattformer ▶ Trapper, rekkverk og ledere ▶ Rammer, deksler og hydraulikk tanker. 		
		

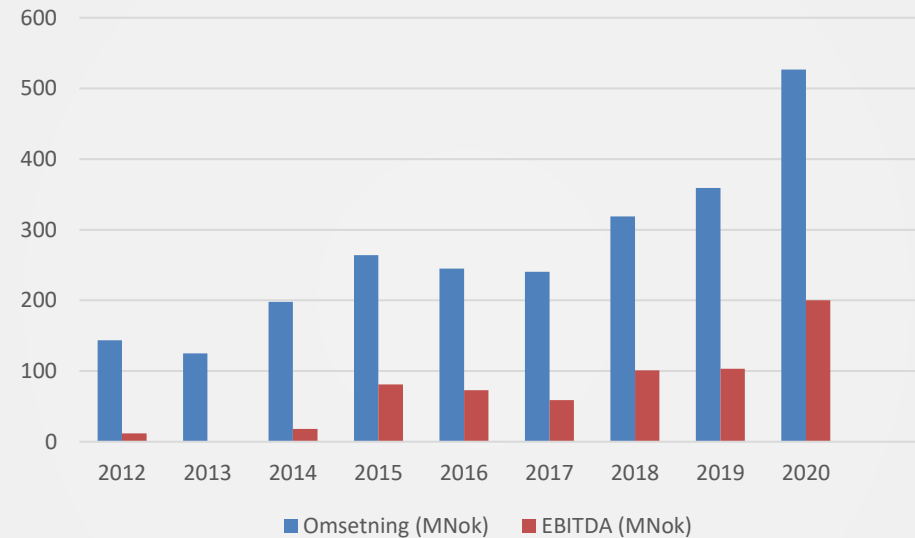
AUTOMATION/ROBOTISATION

- Leading competence within several disciplines as automation and robotisation
- 20 years with extensive experience
- SMV is today a system supplier for external customer in addition to Comrod Group
- Strategic cooperation with Strand Videregående Skole – **SVG** (en ressurs også for eksterne kunder)



THE FUTURE

COMROD NORWAY - TREND



- Strengthen our position as a leading communication supplier world wide.
- 50 each robot install within the next 6 years across the group (65 employees in Budapest)

Covid-19 The Game Changer

Comrod as a group has been limited affected during 2020/2021!😊

We experience following challenges as:

- Reduced visibility for future project and program
- Reduced and more challenging availability of raw materials (earlier mainly related to electronic)
- Increased lead-time
- Increased supply chain cost

Implemented actions (some):

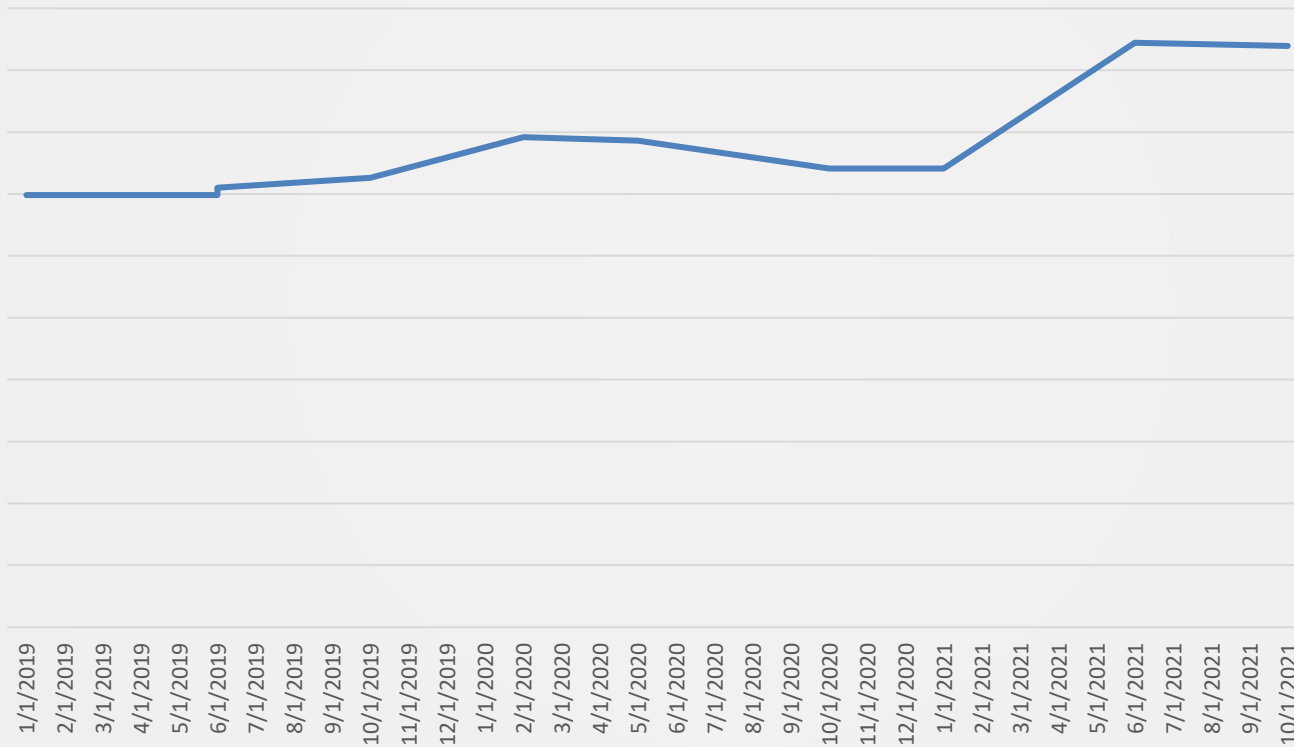
- Expanded our forecast focus in corporation with L3-Harris
- Strengthen our liquidity (+100MNOK – DNB) to meet L3-Harris request and delivery expectations
- Expanded supplier commitment by mirror our forecast for 2022
- Continue to improve our production capacity and efficiency
- Sustainable value become even more important for us as a company/employees



Increased supply chain cost



Typical price impact and development by Covid





Executive Orders (3 in Total)

Strammere retningslinjer for eksisterende lover som Buy American Act og gjort "komponenttester" som avgjør om produktene er laget i USA strengere.



Executive Order

Styrer byråer for å styrke kravene til innkjøp av produkter og tjenester fra amerikanske arbeidstakere og bedrifter, kutter litt byråkrati og skaper en stilling i Office of Management and Budget som er ansvarlig for å håndheve direktivet.

Bestillingen gjentar også Biden-administrasjonens støtte til Jones Act, som begrenser utenlandsk sjøfart mellom amerikanske havner til USA-produserte og eide fartøyer.

*** Neither of the Presidents' Executive Orders interfere with the trade agreement with allied countries. Norway and France are not impacted by these orders to date.**

Transition a continuous process 😊

Our biggest enemy is the satisfaction!



Driven by:

- Our Strategy
- **Our Main set!**

Recognition-Phase

- Should we make a change?
- Have to make a change?
- Should have made a change?

Where are we/Our Goal?

- Opportunities in existing markets? «Low»
- New markets ? «High»
- High Cost/Low Cost
- Competence (11pos)

Implementation - Phase

Our company culture is crucial for our success!

BUSINESS PROFILE

90%
DEFENCE INDUSTRY



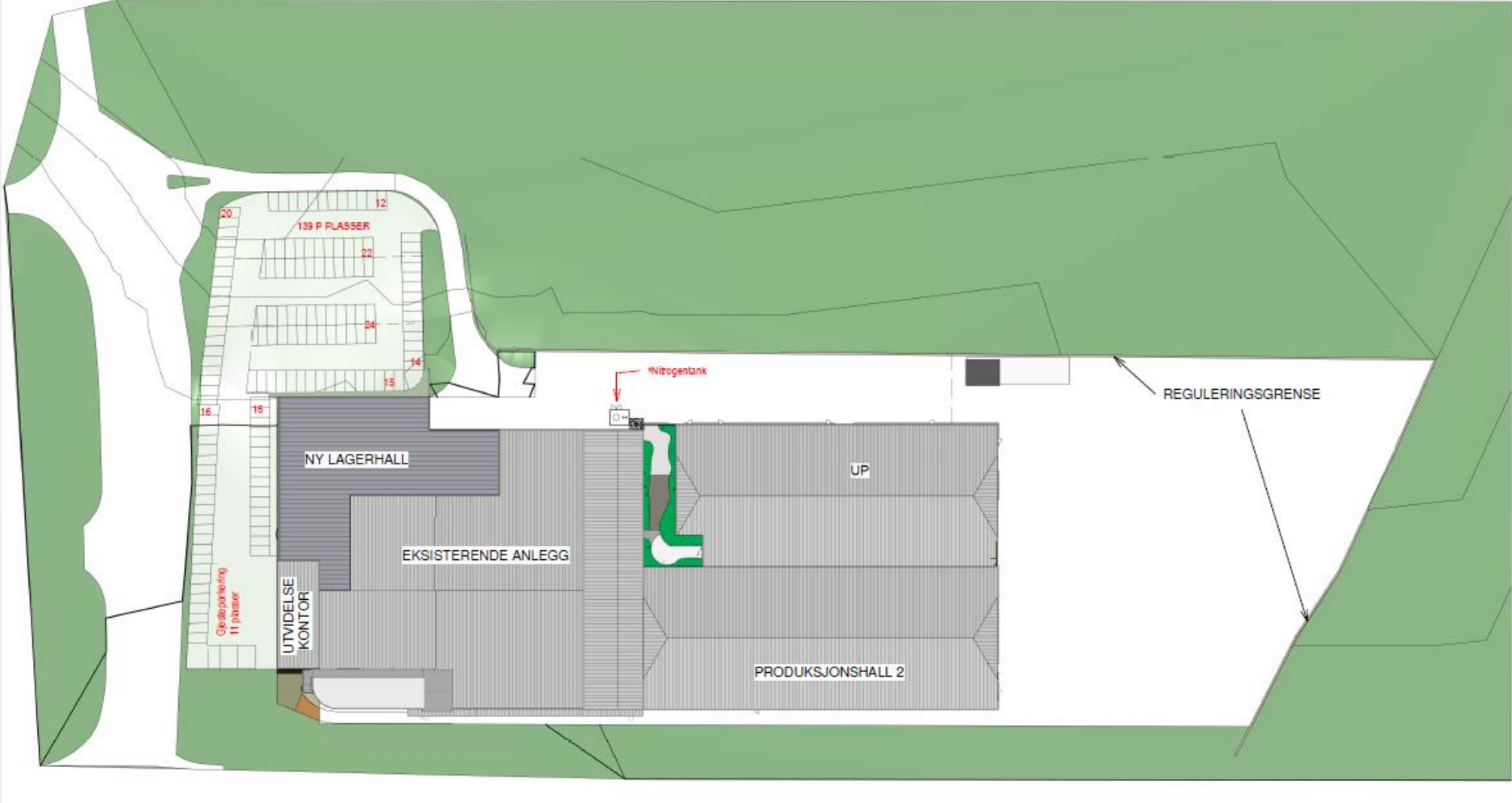
10%
CIVIL MARKETS



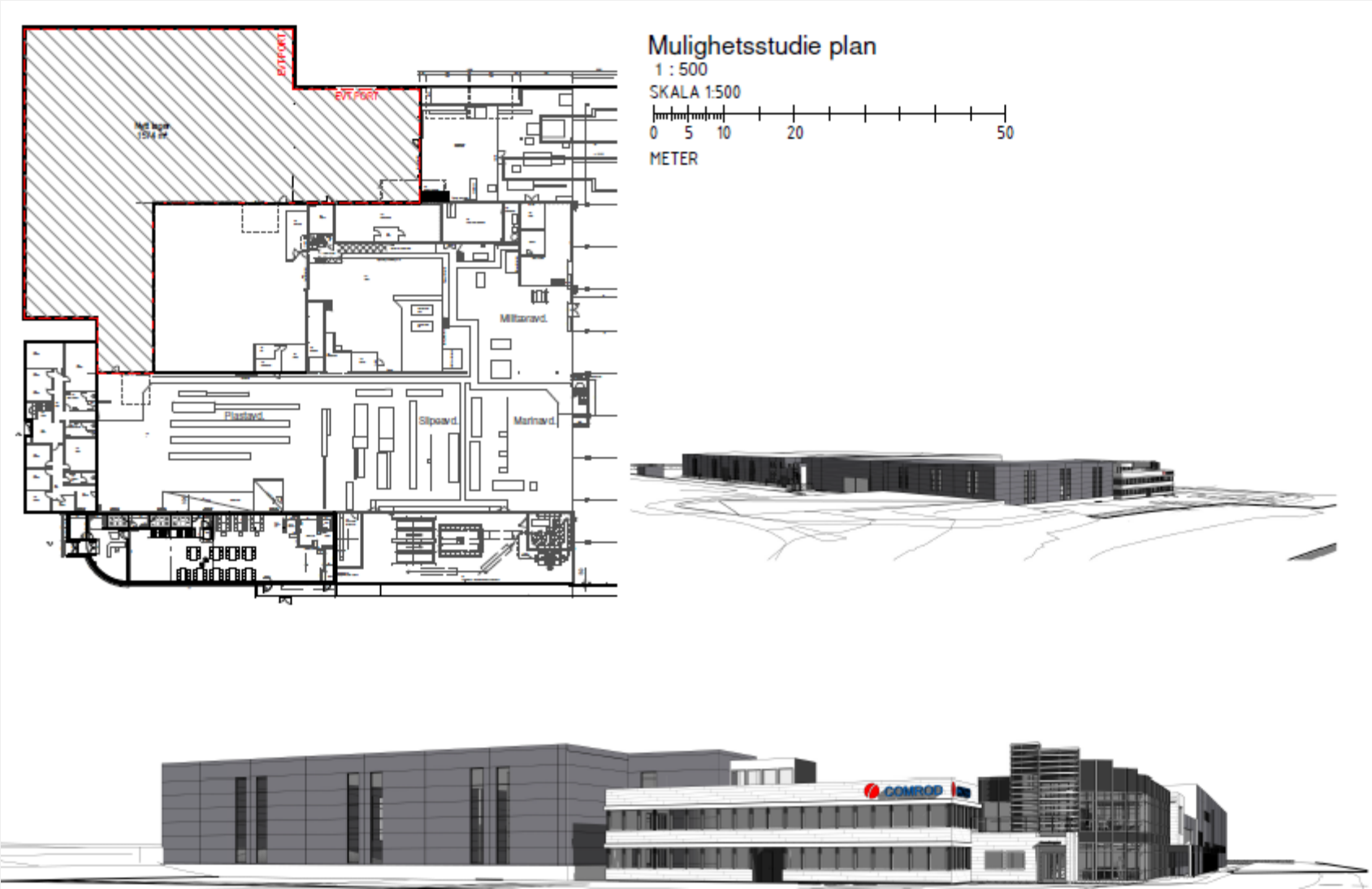
Comrod Communication AS – Produksjonsanlegg i Tierp (Jerol Industri AB)



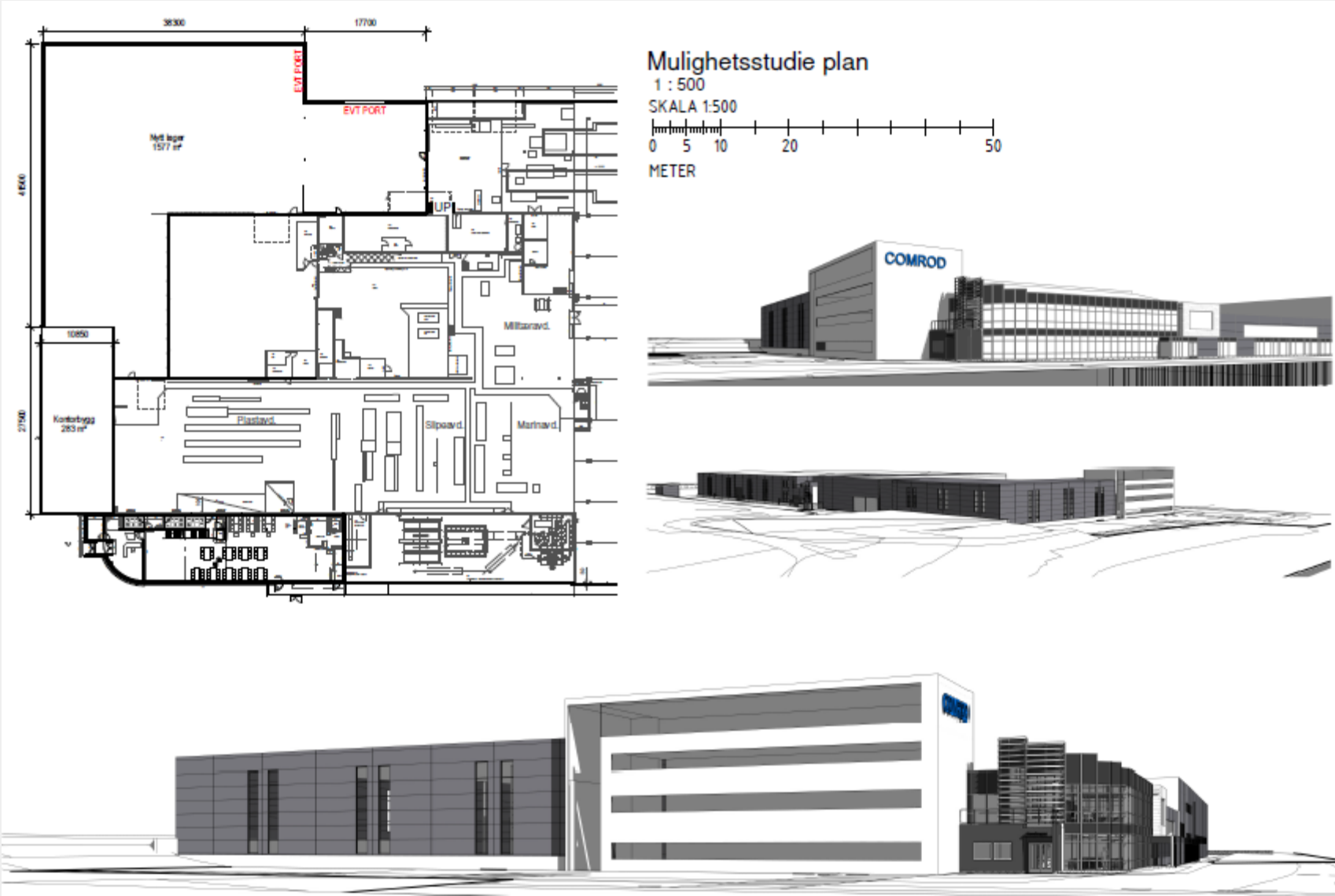
Comrod Communication AS – Produksjonsanlegg Comrod AS



Comrod Communication AS – Produksjonsanlegg Comrod AS



Comrod Communication AS – Produksjonsanlegg Comrod AS



SMV/SVG - A strategic partner for Comrod



Omron - Collaborative Robot

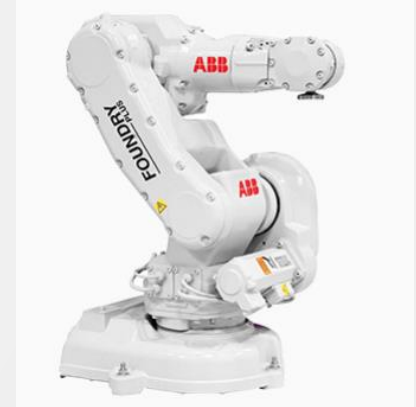


ABB - Industrial Robot

- Collaboration with SVG established in 2020
- Automation & Robot is a key focus for production in a high cost country like Norway
- Provides the students access to the technology of the future
- Support our strategy and recourses to implement 50 robots by the end of 2026
- Support our corporate social responsibility and strategy



- ✓ If you don't like something!
- ✓ Change it!
- ✓ If you can't change it!

✓ Change your attitude 😊

A photograph of a stream with several water treatment components installed. The components consist of grey circular bases with black corrugated vertical tubes. Some tubes have yellow caps. Water is flowing through the tubes, creating a small waterfall effect. The background shows more of the stream and some rocks.

THANK YOU FOR YOUR ATTENTION!