



FORSVARSBYGG

Dialogue conference

Dialogue conference prior to announcement of innovation partnership to develop flexible, mobile and sustainable buildings for the Norwegian Air Force's F-35 combat aircraft.

June 1 2022 at 12.30 p.m. - 2 pm.



Market dialogue prior to announcement of innovation partnership to develop flexible, mobile and sustainable buildings for the Norwegian Air Force's F-35 combat aircraft.

Our properties, buildings and facilities are a crucial component of the Armed Forces' activity, both in peacetime and war.

Changes to the threat picture as well as increased allied training and exercises in Norway creates a need for the Norwegian Defence Estates Agency (NDEA) to be able to set up and take down buildings and facilities quickly and efficiently in new locations. Increased crisis preparedness imposes flexibility requirements on buildings to meet emerging needs.
Innovation partnership

An innovation partnership is a legal procurement procedure and a collaboration model to facilitate increased innovation. The client (public sector) and the private sector (suppliers) shall develop solutions or services that don't already exist in the market.

Grants from Innovation Norway

We have been awarded a grant of up to NOK 15 million from Innovation Norway to enter into one or more innovation partnerships with suppliers where the objective is to develop flexible and mobile buildings.

New dialogue conference 1 June

More than 70 innovators followed our first digital dialogue conference in February 2021 on developing flexible and mobile buildings to contribute to good overall defence in Norway. The dialogue conference and the one-on-one meetings provided us with valuable information on what currently exists on the market, and on which challenges we are facing.

Now we have developed the project and hereby invite the market to a new digital dialogue conference on Wednesday 1 June. The goal is to develop flexible, mobile and sustainable buildings in connection with the deployment with F-35 combat aircraft to other bases with inadequate infrastructure.

About the Norwegian Defence Estates Agency

The Norwegian Defence Estates Agency is a government agency under the Ministry of Defence. Our social responsibility is to develop, build, operate and dispose of property for the defence sector.

See www.forsvarsbygg.no/no/om-oss/fakta/ for more information on NDEA's organisation and operations.

About the dialogue conference

Target group

Suppliers or consortiums/groups of applicants can offer solutions that can contribute to develop flexible, mobile and sustainable buildings for the Air Force's F-35 combat aircraft. We want the proposed solutions to cover the entire project.

If there are any suppliers who have good ideas for parts of the task, we want the suppliers to join forces with complementary expert communities that allow for a comprehensive proposal that will resolve the entire project.

What do we want dialogue on?

The NDEA is conducting a digital dialogue conference with possible suppliers and expert communities as preparation for an innovation partnership. The purpose of the conference is to establish dialogue to obtain knowledge on whether there already are future-oriented solutions on the market that cover our needs, or whether it is possible to develop this.

Among other things, we need information on:

1. Are there already such solutions on the market? If so, how can these cover the Norwegian Defence Estates Agency's requirements?
2. Is the need we want to cover adequately defined? If not, what do you think is missing?
3. This project has an upper limit of approximately NOK 13 million to cover one or more innovation partnerships. Do you as a supplier find it interesting to develop a solution within this framework?
4. What will it take for your business to want to participate in such an innovation partnership?
5. Is it realistic to complete a product/prototype within the schedule of the project by the end of 2023?

We will use insights from the dialogue conference to design the best possible request for tender for a subsequent innovation partnership. We hope that you as a supplier share your knowledge on the possibilities that exist and/or that you consider possible to develop.



Two F35A combat aircraft from the Air Force at Keflavik Air Base during a NATO mission in 2020.
Photo: Torbjørn Kjosvold/Norwegian Armed Forces.

Invitation

We invite you to a digital dialogue conference and one-on-one meetings. The conference will be streamed live, and the one-on-one meetings will be held digitally a few days after the conference.

Business-sensitive information shared in the one-on-one meetings will be handled confidentially. The purpose of the conference is to gain an overview of potential solutions on the market. The information will be used further in the planning of the innovation partnership.



Practical information on the dialogue conference:

Location: Link will be sent after registration for digital meeting.
Time: June 1 at 12.30 p.m 2 p.m.
Agenda: A detailed agenda will be distributed in advance
Registration: Register for the dialogue conference at www.forsvarsbygg.no/innovasjon or scan the QR code to the right with your smartphone to open the registration form.
Contact person: Project Manager Britt-Helen Kvittingen
Email: britt-.helen.kvittingen@forsvarsbygg.no

Matchmaking

Applicants who want to take part in the competition on the innovation partnership should have expertise on the technical areas apparent from the description of needs. For suppliers who fail to cover all areas of expertise, we recommend establishing an applicant group/consortium in order to submit a comprehensive proposal for the competition.



We have created a form for suppliers seeking expertise partners. The form is available at www.forsvarsbygg.no/innovasjon, or you can scan the QR code to the right with your smartphone.

The deadline for completing the form is two weeks after the dialogue conference. Everyone who has completed the form before the deadline will receive an overview of those who are seeking expertise partners.

The NDEA has no role in establishing applicant groups/consortiums beyond making the matchmaking form available, and it is of course possible to establish applicant groups/consortiums on one's own initiative without using the matchmaking form.

Purpose and objective

As initially mentions, we have been awarded a grant of up to NOK 15 million from Innovation Norway to enter into one or more innovation partnerships with suppliers where the objective is to develop flexible, mobile and sustainable buildings.

The objective is to produce innovative solutions for the deployment of fighter aircraft to bases with inadequate infrastructure, in cooperation with the market. The solution must be possible to quickly taken out and sent by land, sea or air to anywhere in the world.

The project must deliver solutions that provide the following benefits:

- 1. Resolve the Armed Forces need to deploy to an air base where there are no other properties, buildings or facilities (PBF) than aircraft operations.*
- 2. That the Armed Forces can operate from such a base for a longer time without a need of regular supplies of equipment.*
- 3. Develop circular solutions that result in less resource use and contribute to reduce greenhouse gas emissions in the sector. Provide less need for the establishment of permanent facilities and infrastructure.*
- 4. Offer flexible solutions that with small adjustments may be used by other operations than the defence sector, such as for the emergency services and humanitarian organizations.*



Two F35A combat aircraft from the Air Force at Keflavik Air Base during a NATO mission in 2020.
Photo: Torbjørn Kjosvold/Norwegian Armed Forces.

Description of needs

1 Introduction

The Armed Forces are in the process of procuring new F35 combat aircraft to replace the old F-16 combat aircraft. In recent years the main F-35 base has been established at Ørland with an advanced operations base at Evenes. In 2025 it is expected that F-35 will be fully operative with 48 aircraft in Norway.

When deploying outside of the permanent bases of Ørland and Evenes, there will be a need to establish a number of support functions in order to operate the aircraft over time. This poses a number of challenges if the deployment base has inadequate facilities and infrastructure.

2 The current situation

There are currently no solutions that are good enough to quickly establish the necessary facilities for offices, workshops and living spaces, among other things. In the event of a deployment, the necessary equipment must be packed as loose packages in empty standard containers. The equipment will then be transported either by aircraft, ship or road to the deployment base. At the deployment base it will be a challenge to unpack the equipment

as there are no warehouses, workshops or offices to store it in.

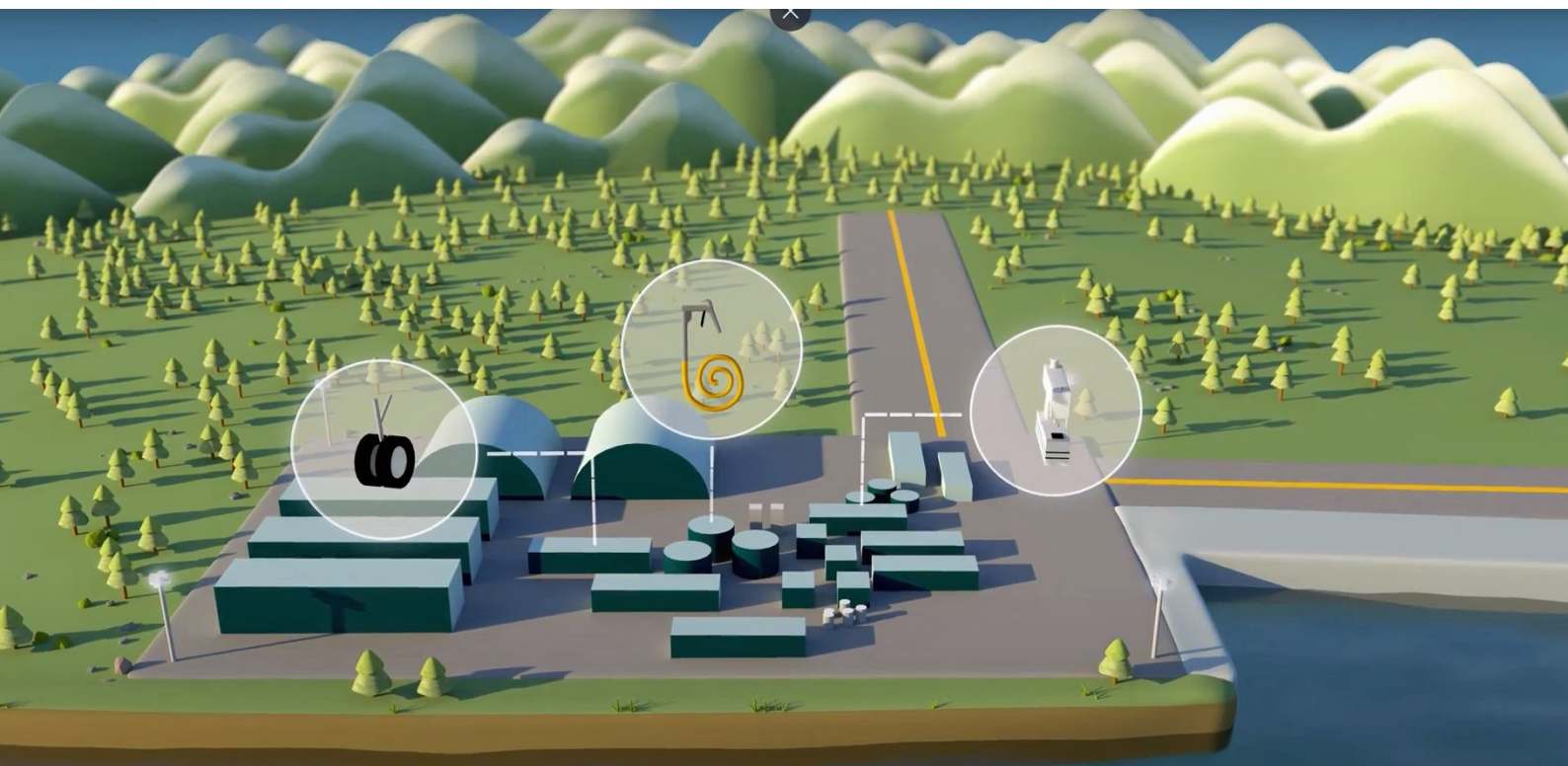
Using the equipment will also be challenging as there are no organised workshops or rooms suitable for the purpose.

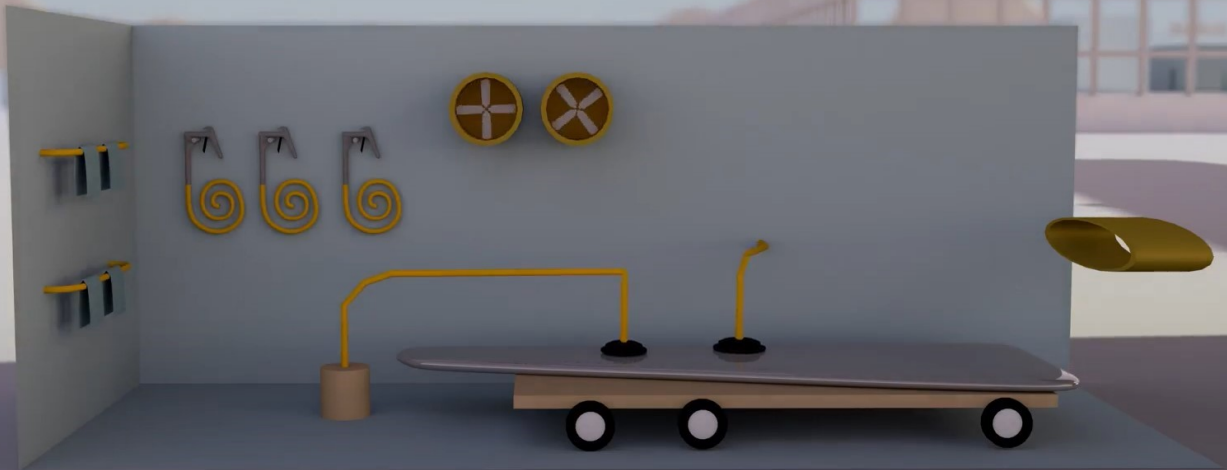
3 Desired needs

The “rear maintenance” department is a support department for F-35 that will have to travel to support any operation. Rear maintenance requires the following functions and facilities to operate, among other things:

RE workshop (rescue equipment) as a workshop for preparing, maintaining and repairing clothing, helmets, rescue rafts, drag chutes and similar. Here there will be a need for three workstations with sewing machines, a long table for packing drag chutes and a high-ceiling room for drying the chutes.

Paint workshop for maintenance and repair of the aircraft’s surfaces. Here there will be a need for personal breathing air systems, a workbench with air extraction and compressed air. It is not necessary for the workshop to accommodate the actual aircraft.





4 Case

The Armed Forces have been ordered to deploy with F-35 fighter aircraft from Ørland air base to “Remoteland” air base. The “rear maintenance” department has to prepare for deployment. They have to pack equipment and supplies in order to operate from Remoteland for 8 weeks. At Remoteland there are no available buildings that can be used, and other infrastructure is also lacking. The personnel will be accommodated in a nearby hotel, and they will receive board at a common mess. Sanitary conditions are also taken care of at the site. Rear maintenance must establish offices, living areas and workshops themselves.

The department starts to pack the necessary equipment and supplies in standard empty 20-foot containers. Everything needs to be packed carefully, as much of the equipment cannot withstand much mechanical stress. It takes a long time to pack the equipment, and it’s difficult to create a system and maintain an overview. To have a roof over their heads at Remoteland they also need to send several empty containers and some large tents. A separate power unit is also packed so that they are self-sufficient in terms of electricity.

When the department arrives at Remoteland, the equipment has already arrived. They start unpacking immediately. The equipment is distributed in several tents and empty containers to the best of their ability. Poor weather with

precipitation and wind pose additional challenges, and the mood in the camp is poor.

The next day the department is to be ready to support operations. Empty containers and tents are brought into use to the best of their ability. A lot of time is spent looking for packed equipment and rigging various tools. The work is chaotic, and they wish they had better facilities and better logistics solutions.

In the evening they are watching the skiing world championships on TV, and notice the national team’s ski waxing bus. The bus has parts that can be extended both in height and width, and folds out like an ultra-modern camper van. It appears to become four times as large when rigging is finished. “Imagine if we could have a solution that became much larger after unpacking, while also being fully integrated,” an exhausted mechanic says. “We have to do this!” says the boss.

5 The purpose of the innovation partnership

Our goal is that we, in partnership with the market, identify innovative solutions for flexible, mobile and sustainable buildings that can be quickly brought out and sent over land, sea or by air to anywhere in the world.

6 Arrangement of the innovation partnership

The innovation partnership shall deal with a new, flexible solution for the Armed Forces' need to quickly establish workshop facilities. The goal is to develop a robust and flexible concept that can also be used in other scenarios for both the Armed Forces and civilian society. One could envision that there was a selection of available modules at one of more contingency warehouses in Norway.

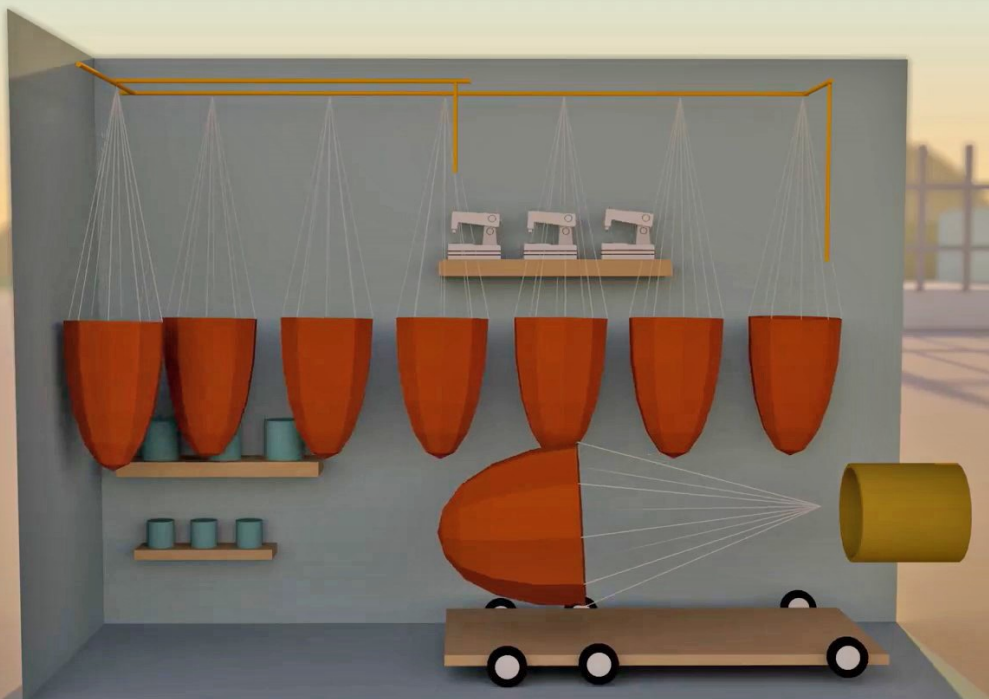
Depending on the need, one can quickly put together a space requirement and requisition the necessary modules from this warehouse. The current solution of empty steel containers and tents is not rational. Alternative solutions with barracks modules require a lot of transportation, long rigging time and special equipment and expertise for assembly.

To make the innovation partnership specific and accurate, we have chosen to use the case described below as the point of departure, and the needs of the "Rear maintenance"

department of 132 Airwing. The aforementioned case provides a somewhat exaggerated picture of a fictive situation. The challenges described are real and the NDEA wants to use the innovation partnership to develop solutions for the Armed Forces that will simplify and rationalise a deployment to an air base with limited access to infrastructure.

Our minimum requirements to a complete solution are:

- During transport that largest dimensions of cargo equal a an older 20-foot container (w x l x h = 244 cm x 606 cm x 244 cm).
- The ceiling height is minimum 2.3 m in all rooms
- Space for workshops will be between 15 and 50 m².
- Everything to be assembled must be in accordance with NATO specifications. This means that we have to dictate the dimensions of equipment to be fitted in containers.
- The solutions must be possible to install by the Armed Forces' personnel, with a maximum of three persons, without a need for specialist expertise.
- Concept and solution must ensure a good working environment in accordance with applicable regulations.



A wide area of application with highlighting of possible use in civil society.

The table below is the solution's needs matrix. The matrix also shows which assessment criteria that will underpin the competition. A high degree of achievement for all requirements is deemed necessary in order for the product to live up to the goal of being robust mobile workshop modules.

| Tema | Description of needs and function requirements |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B01 Function | <ul style="list-style-type: none"> Flexibility with regard to changing sizes of different rooms and functions. Requirements to room designs will vary both in terms of area, height and shape. As much workshop equipment as possible must be integrated in the module, so that one avoids unpacking and assembling the equipment. Smart storage systems for parts and tools A climate shell that works in both Norwegian conditions and warmer climates. Extraction, heating and cooling must be integrated in the solution |
| B02 Assembly and operation | <ul style="list-style-type: none"> The modules can be assembled, connected and disassembled using few people and without special expertise, heavy assembly equipment and large construction machines such as mobile cranes. Simple interfaces for technical facilities such as compressed air, electricity and water. The modules must be prepared for lifting by forklift. |
| B03 Robustness | <ul style="list-style-type: none"> Sturdy quality with a long life that can withstand long-term storage and multiple assemblies and disassemblies. Withstands handling by forklift in connection with loading/unloading and transport. Has surfaces that don't corrode and that can withstand mechanical strain. Security requirements (external strains/ protection and lockability) |
| B04 Compactness: | <ul style="list-style-type: none"> The module is as compact as possible during transport, and where as little air as possible is transported. Solutions that exploit the space optimally and that can be extended as needed. |
| B05 Miljø og bærekraft | <ul style="list-style-type: none"> The solution must have low greenhouse gas emissions from the production of materials. Lower greenhouse gas emissions from transport compared to conventional solutions. With regard to air transport, it would be a great advantage if the solution was relatively lightweight. At the end of life, the product(s) must be easy to prepare for repurposing or material recycling. The use of recycled raw materials is given positive weight. |



FORSVARSBYGG

Our partners:

Innovative anskaffelser

Nasjonalt program for
leverandørutvikling

