



## **Airport Work Management**

### **Appendix 1**

#### **Customer specification of requirements**

## Appendix 1: Customer specification of requirements

### Clause 1.1 of the Agreement, Scope of the Agreement

#### 1. Introduction

##### 1.1. Background

Avinor is procuring a digital tool for planning, coordinating, approving, monitoring, and managing work activities in terminal, landside, and airside areas at Avinor's airports. The tool shall provide a common operational overview of planned and ongoing work and support efficient registration, assessment, coordination, and approval of activities that may affect airport operations.

The objective is to enable Avinor to identify, assess, and visualize the operational consequences of work activities, both individually and in combination with other activities, and to ensure coordinated execution with minimal disruption to airport operations.

The tool is not a work order management system. Avinor already has systems for registering work orders, which describe what needs to be repaired or maintained and where the issue is located. The new tool shall support the planning and coordination of the actual execution of the work, including assessment of operational impact, stakeholder coordination, approval, monitoring, and completion.

##### 1.2. Understanding this document

This document states Avinor's needs for Airport Work Management. The detailed specification of requirements is set out in SSA-L Appendix 1 Attachments 1-3.

Contract draft is enclosed with the procurement documents. Requirements, terms, and conditions in the contract are not repeated in this document. The suppliers must read the contract draft in full.

The Supplier shall give their response to the requirements in the corresponding SSA-L Appendix 2 with attachments.

If any of the requirements are functionality that is not yet available or not fully developed, the Supplier must indicate when it will be so, with as accurate data as possible. In such cases, the Supplier must provide a development plan/roadmap with a clear commitment to the deadline for when the solution/requirement will be met for Avinor in their response to the relevant requirement(s) in Appendix 2 Attachment 1 (column "development status"). The Supplier must clearly indicate whether the cost of the development is a cost for Avinor or if it will be part of the standard functionality. If there are development costs, the price must be included in the price sheet marked as extra development cost (one-time capex).

All shall-requirements must be fulfilled (confirmed to be fulfilled/compliant) within the date for milestone 3 set out in schedule in Appendix 3 for Airport Concept A at OSL (SSA-L Standard Terms and Conditions clause 3.2).

*Please do not include any brochures/leaflets with your answers. If you need more space to write your full answers for one or more of the requirements, please use a separate attachment with clear reference to the relevant requirements.*

**The requirements have the following classifications:**

<b>S</b>	<p>“Shall requirement;” This is an absolute requirement. The requirements shall be answered with “C” (compliant) or “NC” (not compliant). The answers to these requirements will not be evaluated. However, the Supplier shall describe (short and concise) how the requirements are met.</p> <p>Failure to meet a Shall requirement may, depending on the nature and materiality of the deviation, result in rejection. Avinor will make an overall assessment of the tender based on the purpose and needs of the competition.</p>
<b>E</b>	<p>«Evaluation requirement»; The answers to these requirements are subject to evaluation. Suppliers shall provide a description explaining how the requirement is fulfilled. In evaluation of these requirements Avinor will emphasise the solution’s ability to deliver according to the Scope of Delivery described in this Appendix with attachments, including development status and roadmap.</p>
<b>I</b>	<p>“Informational requirement;” are request for additional information however, the answer will not be evaluated.</p>

**1.3. Overview of requirements**

This Appendix 1 describes Avinor’s needs for a new Airport Work Management tool. The information set out in this Appendix 1 is supplemented by the requirements included in the attachments to this Appendix. The Supplier shall respond to all requirements in the corresponding Appendix 2 with attachments and complete the relevant requirement tables and documents specified below.

The Supplier’s response must be complete and sufficiently detailed to enable Avinor to assess compliance with each requirement. Incomplete responses, missing confirmations, or failure to complete the required appendices, worksheets or requirement tables may result in rejection of the tender. Where relevant, the Supplier shall include clear and precise references to supporting documentation, including appendix/attachment, page number and section.

Category	Requirements
Functional Requirements	<p>Functional requirements shall be fulfilled.</p> <p>SSA-L Appendix 2 Attachment 1 – Functional Requirements shall be completed.</p>
General ICT Security	<p>General ICT security requirements shall be fulfilled.</p> <p>The worksheets “TEC CIS General” and “TEC AI” in SSA-L Appendix 2 Attachment 2 shall be completed.</p>
Identity & Access Management	<p>Avinor’s identity solution shall be used in accordance with SSA-L Appendix 1 Attachment 3.1 ADFS – Avinor Federation Guidelines - v1.3.2.pdf.</p> <p>SSA-L Appendix 2 Attachment 3 – Avinor Federation Technical Tender Requirements - v1.0 shall be completed. Any deviations require the Supplier to develop support for these requirements.</p>
System Properties (General ICT)	<p>General ICT requirements shall be fulfilled.</p> <p>The worksheets “TEC General &amp; UX Requirements”, “TEC SLA Requirements”, “TEC Data Exchange” and “TEC Documentation” in SSA-L Appendix 2 Attachment 2 shall be completed.</p>

## 2. Scope of delivery

The scope of this procurement is the delivery, implementation and operation of a digital Airport Work Management tool for Avinor’s airport network. The tool shall support the planning, coordination, assessment, approval, monitoring and completion of work activities that may affect airport operations in terminal, landside and airside areas.

Avinor operates 43 airports that vary significantly in size, traffic volume, passenger numbers, operational complexity and local organisation. The procured solution must therefore support the full airport network and be scalable and configurable to accommodate both large and small airports, different operational needs, different user roles and future changes to Avinor’s airport portfolio.

The procurement is divided into deliveries and options based on Avinor’s airport concepts. Delivery 1 comprises Airport Concept A, which applies to Oslo Airport (OSL). Delivery 1 is included in the initial scope of the Agreement and represents the first implementation of the solution. This delivery shall establish the solution for Avinor’s most complex airport environment, including the highest level of operational complexity, stakeholder coordination, traffic volume, infrastructure dependencies and service expectations.

Delivery 2 comprises Airport Concept B, which covers Avinor’s international airports outside OSL, including Bergen, Stavanger and Trondheim. Delivery 2 is part of the contractual scope and will be triggered by Avinor within the first three years of the Agreement. The delivery shall demonstrate how the Supplier’s solution, implementation approach and service model can be scaled and adapted from Concept A to other large airports with international traffic, significant passenger flows and a broad range of operational stakeholders.

Airport Concepts C–E are optional deliveries under the Agreement. These options are included in the procurement scope but are not part of the initial implementation. Avinor may trigger the options separately for one or more individual airports within the relevant airport concept. The Supplier shall therefore provide a solution, implementation approach and service model that can be adapted to the scope, complexity, traffic profile and local organisation of each airport if one or more options are exercised.

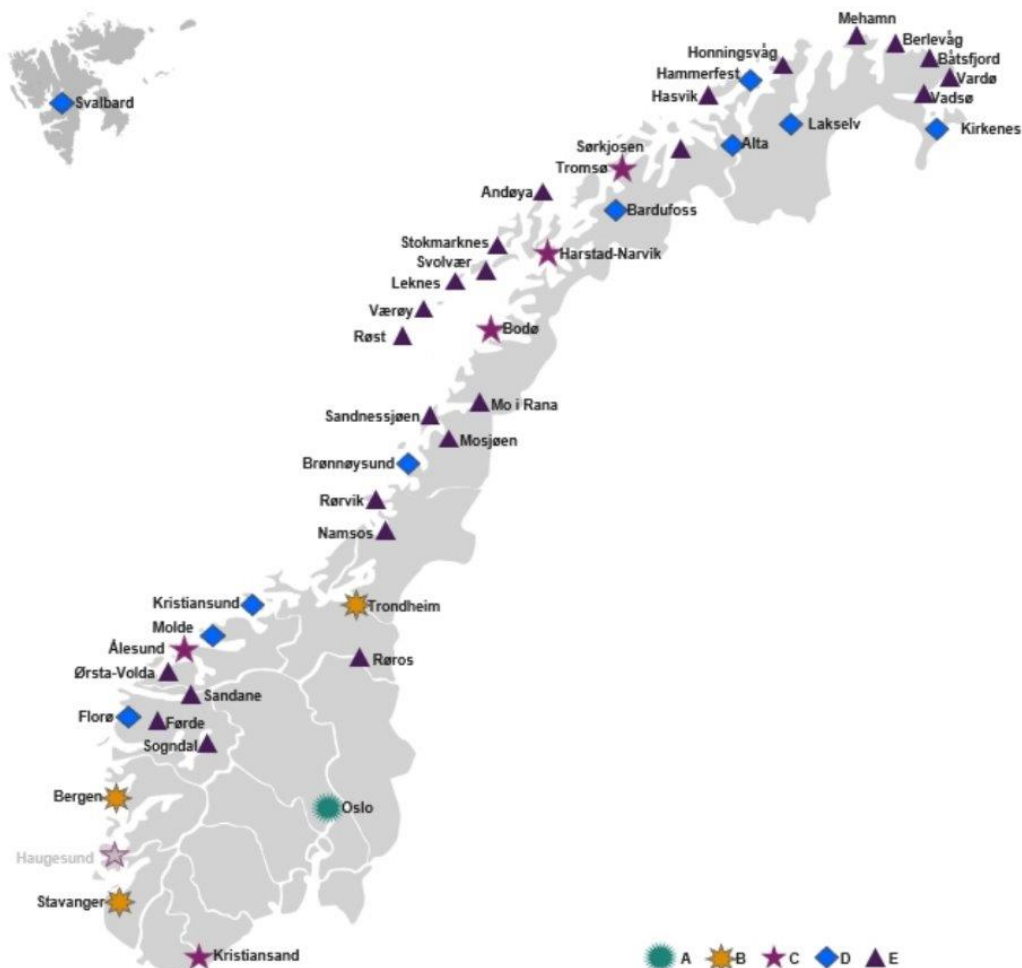


Figure 1: Overview of Airport Concepts A-E

## 2.1. System Capabilities and Boundaries

The system shall support efficient registration, planning, coordination, assessment, approval, and follow-up of work activities across Avinor. The system shall enable consistent handling of applicable legal, regulatory, safety, and operational requirements related to work permits and work authorisation processes across the organisation.

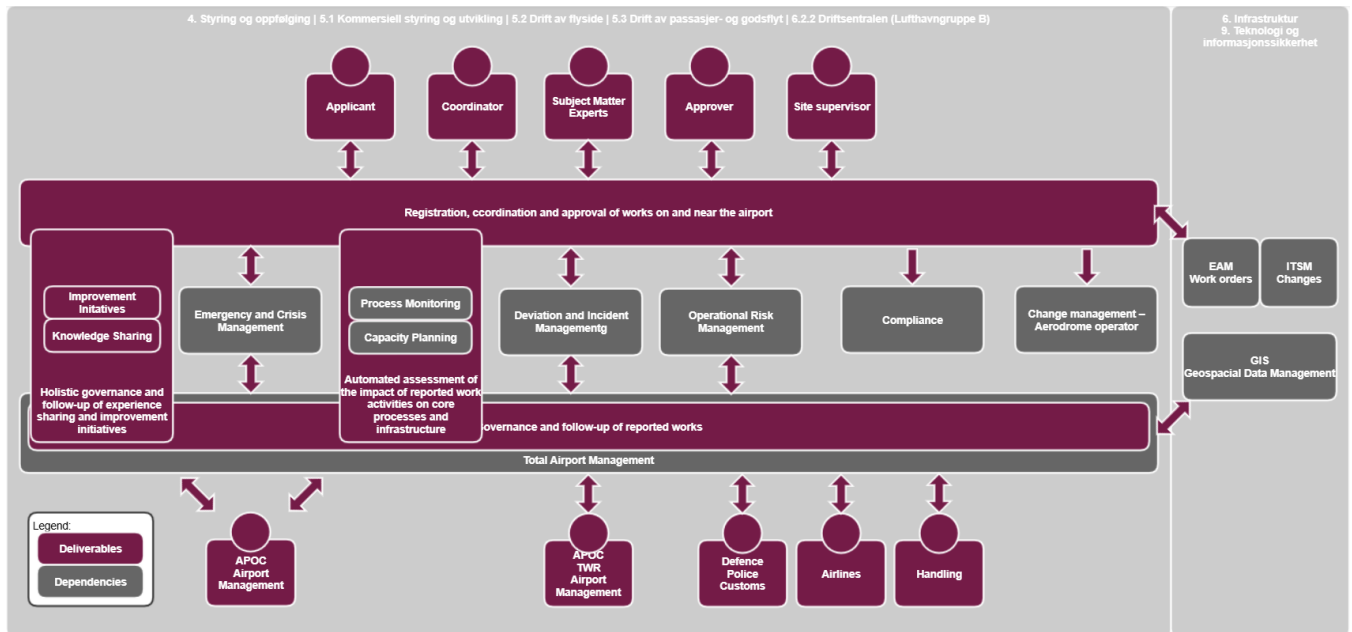


Figure 2: High Level System Context

This includes, but is not limited to:

- Notification and case handling of work and activities that may have operational consequences for Avinor’s core processes 5.2 Airside Operations, 5.3 Passenger and Cargo Flow Operations, and 5.4 Air Navigation Services. This includes a notification solution and a case management system adapted for applicants (submitters), internal coordinators and subject matter experts (case handlers), approvers and site supervisors. It shall be possible to specify and display reported work on maps, and to retrieve information from other systems on associated meetings, operational risk assessments, project activities, work orders and ITSM changes that may be linked to submitted cases.
- Issuance of work permits for work (submitted cases) that may have operational consequences for Avinor’s core processes 5.2 Airside operations, 5.3 Passenger and cargo flow operations, and 5.4 Air navigation services, in accordance with regulatory requirements. This includes documentation of the approval process for compliance purposes.
- Establishing user tailored views and perspectives (dashboards and reports) to provide Airport Operations Center (APOC), Tower (TWR), and others with an

overview of planned and ongoing work that may have operational consequences for Avinor's core processes 5.2 Airside operations, 5.3 Passenger and cargo flow operations, and 5.4 Air navigation services. The views should have a high degree of self service and allow for easy configuration and be adapted to different surfaces/devices (adaptive design). The user tailored views and perspectives shall take into account varying levels of complexity across Avinor's airport network and be adaptable to both large and small airports and operational concepts.

In future phases the system should support:

- Collaboration across airport stakeholders, integrated with Total Airport Management.
  - All stakeholders shall be able to submit work notifications, follow the case progress, and be informed of approved work.
  - Automated assessment of the impact of reported work on infrastructure and core processes, and adherent interfaces such as Airport collaborative decision-making (A-CDM) and extended airport operations plan (eAOP).
- Active use of stored work notifications and activities for secondary purposes, including analysis of reported work to identify improvement measures and to share experience and best practices.

## 2.2. Regulatory Requirements

Avinor is subject to Regulation (EU) 139/2014. This regulation describes several requirements related to the capabilities for planning works on the airside, coordination between stakeholders, and documentation of activities. The system must have capabilities that support such documentation. This may, for example, be achieved through the use of attached plans, mandatory fields, checkboxes, checklists, or other structured documentation mechanisms.

The Supplier shall present its proposed solution. Solutions that are efficient, user-friendly, and simple to operate will be evaluated favorably.

The following regulations, but not limited to, are relevant:

- "Airport Operators Certificate compliance requirements"
  - Regulation (EU) 139/2014
    - ADR.OPS.B.070 Aerodrome Works Safety
    - AMC 1 ADR.OPS.B.070 (C) (1)
    - AMC 1 ADR.OPS.B.070 (C) (2)
    - AMC 1 ADR.OPS.B.070 (C) (3)
    - AMC 1 ADR.OPS.B.070 (C) (5)
    - AMC 1 ADR.OPS.B.070 (C) (6)

- AMC 1 ADR.OPS.B.070 (d)
- ADR.OPS.B.071 Closed runways and taxiways, or parts thereof
- AMC1 ADR.OPS.B.071 (a)
- AMC1 ADR.OPS.B.071 (d)
- ADR.OPS.B.100 Suspension of runway operations and runway closure
- AMC1 ADR.OPS.B.100 (b) (5)
- Hot works
  - Regulation on Ground Services at Airports (BSL E 4-1)
  - Regulation on the Execution of Work
- Excavation
  - Pollution Control Act
  - Pollution Regulation
  - Waste Regulation
  - Regulation on Alien Organisms
- Security
  - National Security Program for Civil Aviation in Norway (NASP)

Avinor has operationalized these requirements in the following governing documentation that are supporting documents to this Appendix 1:

- PR00075 *Airside Safety – Anleggs- og vedlikeholdsarbeid – sikkerhet ved arbeider på lufthavn*
- PR00585 *Airside Safety – Anleggs- og vedlikeholdsarbeid – sikkerhet ved arbeider på lufthavn – rutinearbeid*
- PR00586 *Airside Safety – Anleggs- og vedlikeholdsarbeid – suspendere eller stenge områder*
- PR00130 *Plasstjeneste – Inspeksjoner, rapportering og vedlikehold – rapportering av forhold på ferdselsområdet*
- PR00349 *Plasstjeneste – Inspeksjoner, rapportering og vedlikehold – overvåkning og inspeksjon av ferdselsområdet*
- IN05347 *Airside Safety – Safety vakthold ved anleggsområder flyoperative flater*
- SS00576 *Airside Safety – Arbeider på flyoperative områder*
- SS01506 *Airside Safety – Kontroll før oppstart av arbeider på flyoperativt område*

These documents are provided for information purposes and as supporting documentation for the procurement. The documents are made available in Norwegian, and suppliers are requested to arrange for translation where this is necessary for their understanding of the documents.

### 3. Requirements

The complete list of requirements is set out in SSA-L Appendix 1 Attachment 1-3.

Below are examples of requirements/documentation that should be supported by the system. Please note that the list is not exhaustive.

- Approval of work and issuance of work authorization documents.
- Clear indication of time and date for the works and their consequences.
- The actual area of the work and the area affected by the work.
- Specification of start-up/return-to-operation activities, with documentation of completion.
- Identification of who supervises the works.
- Use of barriers/lights to indicate area of work restrictions, annotated on maps with plan.
- Confirmation that relevant governing documentation has been followed.
- Attachment of detailed plans and links and/or references to governance, risk and compliance artifacts, the project management system (Omega 365), enterprise asset management system (IFS) EAM and/or ITSM system (ServiceNow).
- Overviews confirming that involved parties have received relevant information/requirements, including safety-related aspects, with a POC per involved party.
- Assessments related to specific conditions (jet blast, excavation notifications, crane notifications, NOTAM use, AIP changes, etc.).
- Visibility of any change notification prepared (link to change management system).

The Supplier's written response to the requirements may be supplemented by a product demonstration. As part of the evaluation and negotiation process, the Supplier may be requested to demonstrate the capabilities of the proposed system through a demonstration based on the actors and use cases described below. During the demonstration, it is desirable that the Supplier shows compliance with the functional and non-functional requirements specified by Avinor in this Appendix 1 with attachments, including actors and use cases as outlined below.

#### 3.1. Actors

**Applicant (NO: Innmelder):** A person who applies for the work permit. It could be the project manager, facility owner, field maintenance personnel/inspectors, etc. The applicant acts as a link between operations/projects and the Coordinator. An applicant can be either an internal or external employee.

**Subject Matter Expert (NO: Premissgiver):** A person who sets the conditions for the execution of work within their respective field of expertise. An SME can only be an Avinor employee.

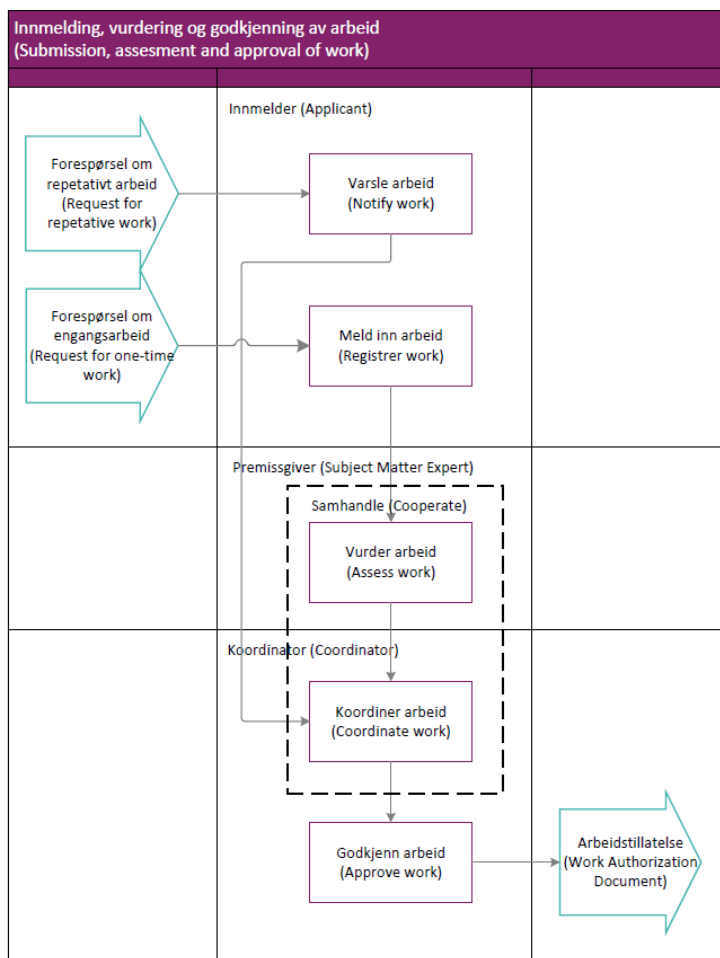
**Coordinator (NO: Koordinator):** A person who coordinates works, identifies operational impacts, approves work and issues work permits.

**Approver (NO: Godkjenner):** A person who approves work and issues work permits. Approver can delegate this task to a Coordinator.

**Site Manager (NO: Arbeidsleder):** A person responsible for the actual execution of the work and is present at the work site. For minor works, this is often the same person as the project manager, but for major works, it is typically a dedicated person. A work may have multiple site managers. This person can be either an Avinor employee or an external person.

### 3.2. Use cases

#### 3.2.1. Work notification, assessment and approval



**Scenario:**

- **Actors:** Applicant (Submitter), Subject Matter Expert (SME), Coordinator
- **Trigger:** A work request is created (one-time or repetitive) or received from an external system (IFS work order / ITSM change order).
- **Preconditions:** Required documentation is available (e.g., plan/schedule, contact overview, utility location evidence, and precise work location shown on map).

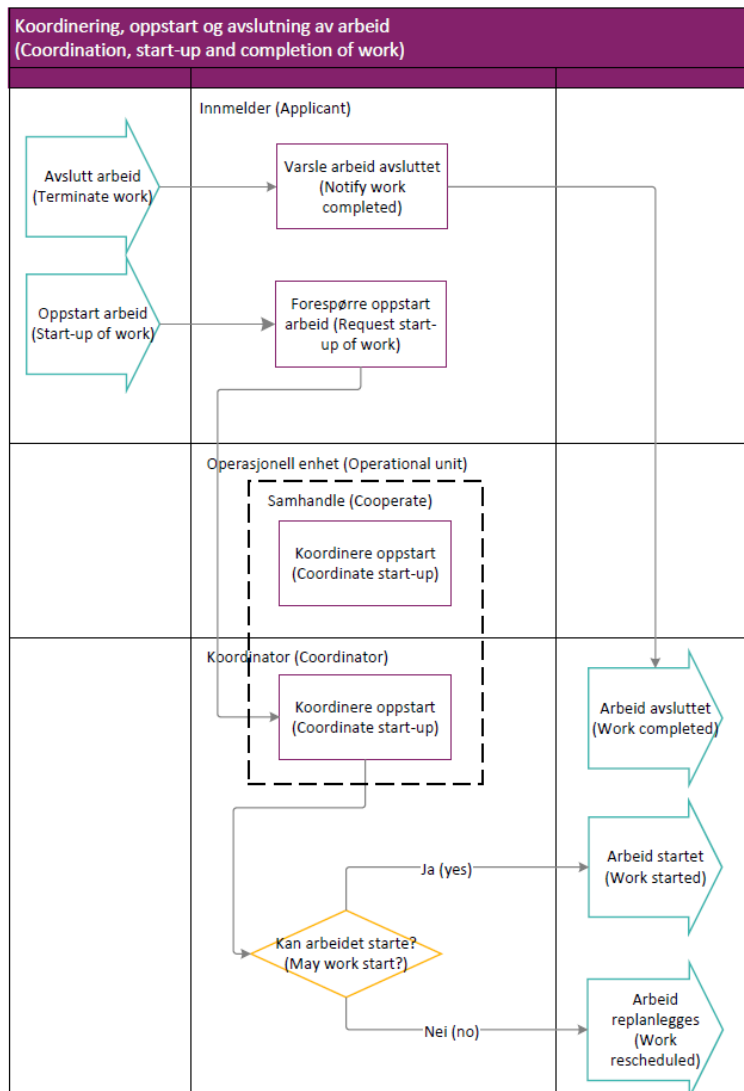
**Main flow:**

1. Applicant: Submits a work notification (adds documentation and marks the work area on a map).
2. Subject Matter Expert (SME): Assesses the work and completes the checklist.
3. Coordinator: Coordinates the work (resolves conflicts and ensures all assessments are completed).
4. Coordinator: Authorizes the work (issues work authorization).
5. Coordinator: Notifies relevant stakeholders.
6. Coordinator: Confirms approval and sets the work as approved/ready to start.

**Post-conditions:**

The work notification is registered and approved. The work may start. It must be possible to update the approved work (with traceability).

### 3.2.2. Coordination, startup and completion of work



#### Scenario:

- **Actors:** Applicant (Submitter), Site Manager, Coordinator
- **Trigger:** Work has been authorized (work authorization issued).
- **Preconditions:** The work authorization and applicable premises/requirements are communicated to the Site Manager.

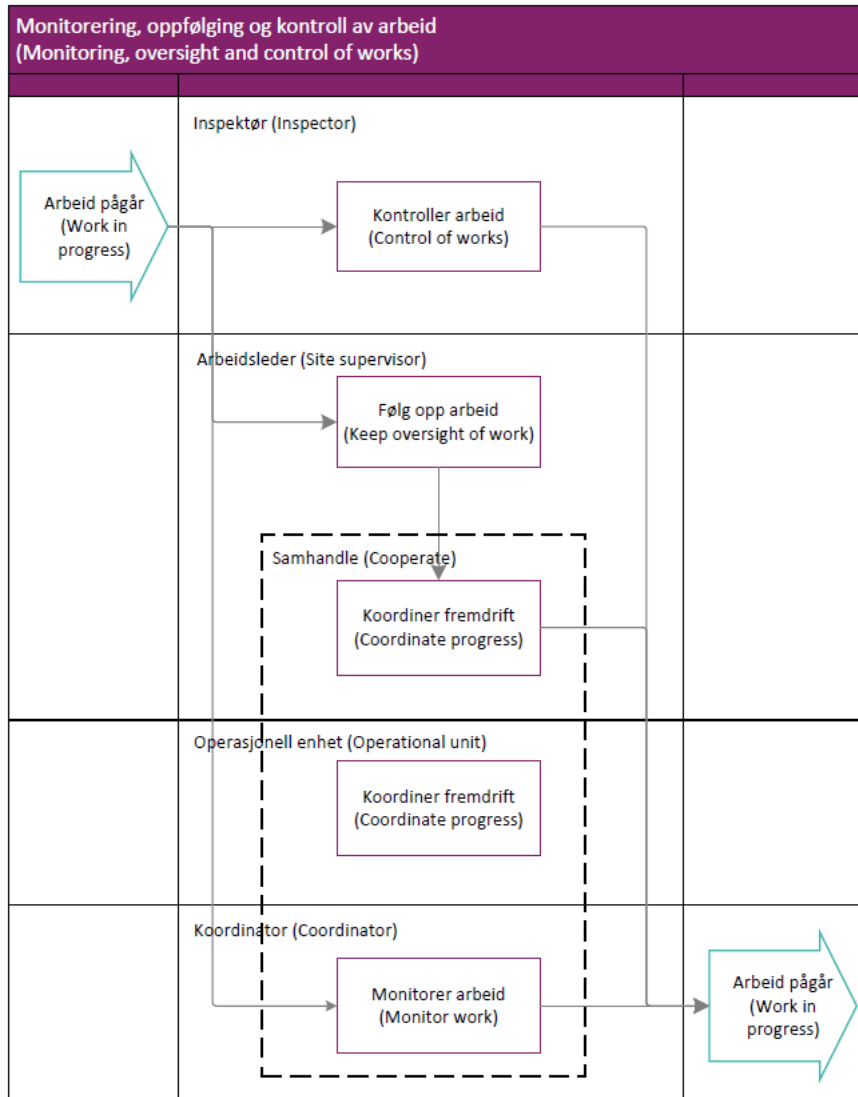
#### Main flow:

1. Applicant: Notifies the Site Manager and follows up if needed.
2. Site Manager: Starts the work (registers start time), executes the work, reports changes, and completes the work (registers completion).
3. Coordinator: Monitors progress, follows up changes, and reports status.

**Post-conditions:**

Work is completed and closed.

**3.2.3. Monitoring, oversight and control of works – Airport Category A**



**Scenario:**

- **Actors:** Site Manager, Coordinator
- **Trigger:** A deviation is detected during authorized work (e.g., safety, operational impact, non-compliance).
- **Preconditions:** Work is paused/stopped and the deviation has been registered.

**Main flow:**

1. Site Manager: Reports the deviation, stops/pauses the work, and provides relevant documentation and location/context.
2. Coordinator: Assesses the deviation and decides corrective actions (e.g., additional premises, restrictions, re-planning, escalation).
3. Coordinator: Communicates the decision, updates status, and authorizes resumption or confirms continued stop/closure.
4. Subject matter expert (SME): Assesses the work.

**Post-conditions:**

The deviation is handled and documented. Work is either authorized to resume with updated conditions or remains stopped/closed.

**3.2.4. Monitoring, oversight and control of works – Airport Category B-E**

The process described in the three previous use cases will largely be the same for airport category A-E. However, the complexity of airports, airport size, and involved stakeholders vary, and the process must be scalable. For example, the smallest airports may have 1–2 people covering most roles, while OSL will have many people involved. The process duration can vary from minutes to months.

Delivery to Airport Categories C-E are options under the Agreement.