ConOps - Company B

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Group members:

Name	Student Nr.
Mathias Nyberg Grønne	201606144
Anders Kjær-Rasmussen	201303705
Omer Reza	201903680
Jakob Dybdahl	201607803
Casper Janerka Ingeberg	201609470
Mads Mørch Antonsen	201606402
Saif Salih	201609346
Nicklas Drejergaard	201608106
Alexander Mølsted	201607814
Rasmus Østergaard Thorsen	201608891
Michael Bro Moseholt	201606904

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1. Introduction

1.1 Purpose

This document contains the concept of operations (ConOps) for company B. The purpose of ConOps is to describe conceptually how the extension will work from the perspective of a System User. This is generally used to communicate quantitative and qualitative system attributes to stakeholders.

1.2 Output

The goal for this document is to clarify the goals and objectives for the extension. The delegated responsibilities and how the organization is among stakeholders and users.

1.3 Executive summary

The extension will give a solution to a more accurate way of scanning baggage than the currently used solution in the CrisBag system. This is achieved by adding a control area with more accurate x-ray scanners. A primary focus is to integrate the solution with the already existing solution, and provide information to Airport Personnel in case of a security breach. The System Users will mainly be airport personnel, who examine all baggage in the extension. There exists multiple stakeholders including the customer, which is the airport itself. The extension will be completed before January 1st 2021. Due to this deadline and to achieve a minimum of functional downtime, strict scheduling and planning must be enforced.

1.4 Revision

Date	**Author**	**Version**	**Change Description**
26-02-2020	AM	0.1	Created the document
29-02-2020	JD	0.2	Capability Need
29-02-2020	RØ	0.3	Introduction and contact info (still missing summary)
01-03-2020	AM	0.4	Operations and Support Description
01-03-2020	RØ	0.5	Finished the introduction with a summary
02-03-2020	SS	0.6	Functional Capabilities
04-03-2020	Company B	1.0	First version of the document
14-03-2020	MM, ND	1.1	Added the Scenarios under section 3.

2. Capability Need

2.1 Business Need, Current Solution and Product

The needs for this extension are given by a larger airport in need of a more accurate security scan of baggage. The extension will be an extension to the currently implemented CrisBag solution. The current solution comprises a primary screening level, that relies on x-ray imaging. These images often lead to manual checking of the baggage because it can be hard to distinguish between unapproved and approved content. This requires a lot of manual labor of Airport Personnel to go through the suspicious baggage.

The purpose of this extension is to extend the current solution with accurate x-ray scanners and a control area where suspicious baggage can be investigated - the last process is referred to as “Ultimate control”, as baggage failing this test will be destroyed.

The process the baggage goes through with the new extension is listed below:

1. Rejected baggage prior to the extension will have a x-ray image produced for further visual inspection by Airport Personnel.
2. Suspicious baggage will go through the ultimate control area for manual inspection and potentially destroyed.

With the extension the airport expects the amount of baggage, which will undergo manual inspection, to drastically decrease while the security level will increase.

3. Operations and Support Description

3.1 Missions (Primary/Secondary)

The missions for the product can be divided into primary and secondary missions.
Primary:

- Provide Airport Personnel with information in case of security breaching baggage.
- Ensure integration with the existing baggage handling system.
- Create a reliable extension that can provide an accurate x-ray scanning of baggage to ensure the security of passengers and their baggage.

Secondary:

- Establish an interval between security scans, that are enough to give the Airport Personnel time to visually inspect the baggage.
- Ensure enough time to the security scan area, that Airport Personnel has time to pick out baggage manually based on previous x-ray images
- Conclude if a passengers baggage is secure or insecure, this way baggage can be distinguished by the Airport Personnel.

3.2 Users and Other Stakeholders

Users are personnel that on a day-to-day basis interacts with the extension. System Users are described below:

- Airport Personnel puts baggage on the CrisBag system.
- Airport Personnel inspects all the images of the scanned baggage in the system.
- Airport Personnel who handles all the baggage marked as a security breach that goes into the ultimate control area.
- The on-site maintenance team, that makes sure that the extension is running properly and changes parts where there is something wrong.

Stakeholders are anyone who potentially can be affected by the outcome of the project. Stakeholder of the extension is described below.

- The development team of the baggage handling extension. (Internal and direct stakeholder)
- The airport(customer) and the different kinds of personnel in the airport working with the extension. (Internal and direct stakeholder)
- The passengers of the airport, with checked-in baggage. (External and indirect stakeholder)
- Airline companies that carried the baggage. (External and indirect stakeholder)
- Emergency first responders. (External and indirect stakeholder)
- The airports board of directors. (External and indirect stakeholder)
- The external contractors. (External and indirect stakeholder)

3.3 Policies, Assumptions and Constraints

The following policies applies to the extension, assumptions are made and constraints are created.

Policies:

- All components will go through a thorough testing procedure internally before it will be used at the airport
- Each member of the development team has a 37 hour work week.
    - In the installation period at the airport this policies does not apply

Assumptions:

- No increase in the cost of components are expected.

- The external contractors will uphold their end of the contract, and complete the work they have been assigned before the deadline set for them.
    - Weekly check-in to make sure everything goes as planned
- Developers are paid per hour. It's assumed that the hours needed is a fixed number, and there is no increase in salary during the period.
- There will be no changes in the amount of staff attached to this project.

Constraints:

- The extension must be ready for public use before January 1st 2021. (See SEMP timeplan section)
- The extension must be ready for trial testing latest September 1st 2020. (See SEMP timeplan section)
- All staffing resources are limited in regards to time. The expected availability can be seen in the case description.

3.4 Operation Description

Operating concept (OpCon):
The product will be an extension to the CrisBag system, already installed in the airport. It will be used on a daily basis and is critical for the safety and security of the passengers and their baggage. The extension scans all previously rejected baggage with a new more accurate x-ray scanner. The new x-ray scanner is an improvement of the x-ray scanner that is already incorporated into the CrisBag system.

Scheduling and operations planning
The extension must be able to operate with minimal downtown, because it is critical for the airport that all baggage is transported to the plane, it is important to have a minimal downtime. In order to achieve minimal downtime, planning and scheduling must be done.
Management of spare parts for the CrisBag system is crucial. There must always be spare parts in stock and easily accessible in case the CrisBag system has a failure. In the case that there are no spare parts accessible, the systems time-to-recovery will be longer than its acceptable in a busy airport environment.
It's important to maintain contact with all the suppliers to ensure we know what going on in case of price changes, production problems, or other unknown entities.

Environment
This part of the CrisBag system will operate in an indoor environment. This means that the extension will have a stable environment where temperature and humidity changes will be held to a minimum. When the environment is stable, the risk of failures of the extension is minimized, and it will be easier to test the extension under the same conditions as it will be under in the airport. Due to the indoor environment the geographical location doesn't matter.

Interoperability with other elements

This is an extension to a CrisBag system. The interoperability with the old CrisBag system will be crucial for a successful project. This extension will not work separately and it can be hard to get the integration on point in a busy airport, therefore planning of this part is important.

3.5 Product Support Description

The extension is a crucial part of the airport when the extension is first put to use, therefore it is important that the Airport Personnel can reach out to Beumer Group in case of system failure. The Beumer Group personnel should be available all hours and ready to provide technical support, in order to fix the problem as soon as possible.
In order to fix the problem as soon as possible it's important to have spare parts on-site, so broken parts can be replaced without too much down time. The extension is build to help small failures due to its redundancy of conveyor belts and x-ray scanners, but the ultimate control area is not redundant.

3.6 Potential Impacts

The impact of this extension will be the following:

- Better automation to determine whether the baggage is secure or not. This means less time the Airport Personnel use on manually checking baggage.
- Baggage to airplane time will be smaller due to less manual work on checking baggage.
- Passengers will be more satisfied, because it's not a great experience to have airport personnel going through your baggage, when the passenger has nothing to hide.

3.7 Scenarios

The different scenarios for checking a bag and their possible outcome is described in the table below. A pass results in the baggage being boarded on the plain and a fail will ultimately result in the baggage being destroyed.

Area 1 Screening machine	Manual inspection	Backs goes through the system
Pass	n/a	Pass
Fail	Pass	Pass
Fail	Fail	Fail

4. Functional Capabilities

4.1 Operations

No baggage will be able to go through the area without having been security approved. This is regardless of mechanical errors, operational faults or other errors. From the baggage entry to the additional screening there will pass at least 70 seconds. This is to allow for manual inspection of a previously taken x-ray image. From passing additional screening until reaching the entry point of manual inspection there will pass at least 30 seconds. Bags can be manually removed from the extension through one offset workstation. They can be manually transported to the search room and destruction area to complete the security process.

Baggage rejected at the first screening prior the extension must be routed the the Additional Screening Area extension. Baggage rejected in the additional screening machine, must wait for the final result from the Airport Personnel, after which rejected Baggage are sorted to the manual handling area for inspection. Cleared Baggage is sorted to the planned destination.

It will be possible to load cleared items back to the extension at the manual handling areas. It must not be possible to send full totes through the manual handling area.

Secure bags are then re-introduced to the extension through one dedicated workstation. Baggage is loaded to an empty tote and then associated with the tote by a hand-held scanner/or keyboard.

4.2 Support

Beumer will provide on-site training for the personnel team after the extension has been installed. The Airport Personnel will be instructed in how to use the extension, and simple repairs as specified in the contract.
Beumer will provide customer service for the customer. There will be a proper channel for the customer to ask questions regarding the extension.

Furthermore, Beumer will provide extra equipment and replacement parts on request during the life-time of the extension. These are specified in the contract.

5 ConOps Development Team

This section describes the team involving in maintaining and developing the ConOps, for any further questions and other inquiries direct them to one of the following:

Saif Salih	201609346@post.au.dk

Casper Janerka	201609470@post.au.dk
Jakob Dybdahl	201607803@post.au.dk
Alexander Mølsted	a-m-h-r@hotmail.com
Rasmus Østergaard Thorsen	au563149@post.au.dk