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Improving Compliance Monitoring Program Model for Contracted Services

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The purpose of this study was to improve the compliance monitoring model for contracted services at Finnair. Finnair is a network airline that focuses on passenger and cargo traffic between Asia and Europe. The study was performed in the Safety, Security and Compliance Management department, together with the Ground Operations unit.

The study utilized the method of action research, conducted between April 2020 and April 2021. The study used qualitative research methods and was conducted by using a questionnaire and through interviews. The study first investigated the current state of the compliance monitoring model and responsibilities and interfaces related to it. Based on the findings from the current state analysis, the key focus areas for development were selected which included: 1) clarifying the ownership of safety and compliance related matters, 2) clarifying the definition of responsibilities and interfaces for contract monitoring, and 3) defining the complexity of contracted services, and describing the monitoring elements.

To improve these key focus areas, the study then gathered knowledge and relevant best practice, aviation regulations and standards. The input and feedback collected from the stakeholders was extensively utilized during the proposal building and validation stages.

The thesis outcome is a compliance monitoring program model for contracted services, which considers the complexity thus impacts flight safety, and defines the monitoring elements and responsibilities, and it is also acceptable for the competent authority. It also improves visibility for the overall quality of contracted services and clarifies the governance model in the Operations unit.

Keywords	Complexity, Compliance, Elements, Model, Operations, Responsibility, Safety, Quality

Contents

Glossary

AOC	Air Operator Certificate
AMC	Applicable Means of Compliance
COVID-19	The virus thing which changed everything
DAQCP	De-/Anti-icing Quality Control Pool
EC	European Commission
EASA	European Aviation Safety Agency
ERC	Event Risk Classification
GH	Ground Handling
GM	Guidance Material
GOPS	Ground Operations
GOM	Ground Operations Manual
GSE	Ground Service Equipment
HOTT	House and Travel of Transportation
IATA	International Aviation Trade Association
IFQP	IATA Fuel Quality control Pool
IGOM	IATA Ground Operations Manual
ISAGO	IATA Operational Safety Audit for Ground Operations
ISM	IOSA Standards Manual

ISO9001	International Standard for Quality Management
KPI	Key Performance Indicator
NB	Narrowbody aircraft (e.g. Airbus A320)
OPS	Operations
ORG	Organization
Part-145	Organization approval by EASA for Aircraft Maintenance companies
RACI	Responsibility assignment matrix. Describes the division of Responsible, Accountable, Consulted and Informed roles
SCM	Safety and Compliance Management
SCMM	Safety and Compliance Management Manual
SSCM	Safety, Security and Compliance Management
SGHA	Standard Ground Handling Agreement
SLA	Service Level Agreement
ULD	Unit Load Device
Q-Pulse	Safety and Compliance database
WB	Widebody aircraft (e.g. Airbus A350)

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1 Introduction

Finnair is a network airline that is focusing on passenger and cargo traffic between Asia and Europe (Finnair Company 2020), operating also to the United States and many scheduled leisure destinations. It means, that services related to turnaround on the ground, are needed in all of these destinations. Finnair's staff is mostly Flight crew, Maintenance, and Head office staff. Ground turnaround-related services are outsourced in Finland (excluding own line maintenance at Helsinki) and at all network airports. Even though these services are outsourced, the airline is always responsible for the safety and security related to these services.

According to the aviation regulations and recommendations:

> *The airline shall have processes to monitor external service providers that conduct outsourced operational functions for the Operator to ensure requirements that affect the safety and/or security of operations are being fulfilled. (IOSA ISM ed. 13 2019)*

The purpose of this thesis is to examine the current state of the compliance monitoring program model for the contracted services and to propose improvements to it. While writing this thesis, the COVID-19 pandemic changed the world and especially had a hard hit on the aviation industry. This also changed the way airlines can monitor compliance with their outsourced service providers, previous methods were based on historical data and expectations of continuous growth. These assumptions have changed dramatically and therefore it is now the correct and essential time to improve this monitoring model.

1.1 Business Context

Due to optimum geographical location, "Finnair is the only European airline that can operate flights to most Asian destinations on a 24-hour aircraft rotation" (Finnair Company 2020), meaning that the routes can be operated by using single aircraft as round trips within 24 hours. Due to this benefit, utilization of the aircraft is at a world-class level and subsequently also gives challenges to the ground time optimization.

The case unit of this thesis is the Operations unit which is responsible for signing a contract with contracted services and following up that they perform services following

the contract. The Safety, Security, and Compliance Management is part of the Operations unit and is responsible for monitoring compliance with relevant regulations and requirements.

The organization chart of Finnair is shown in Figure 1 below.

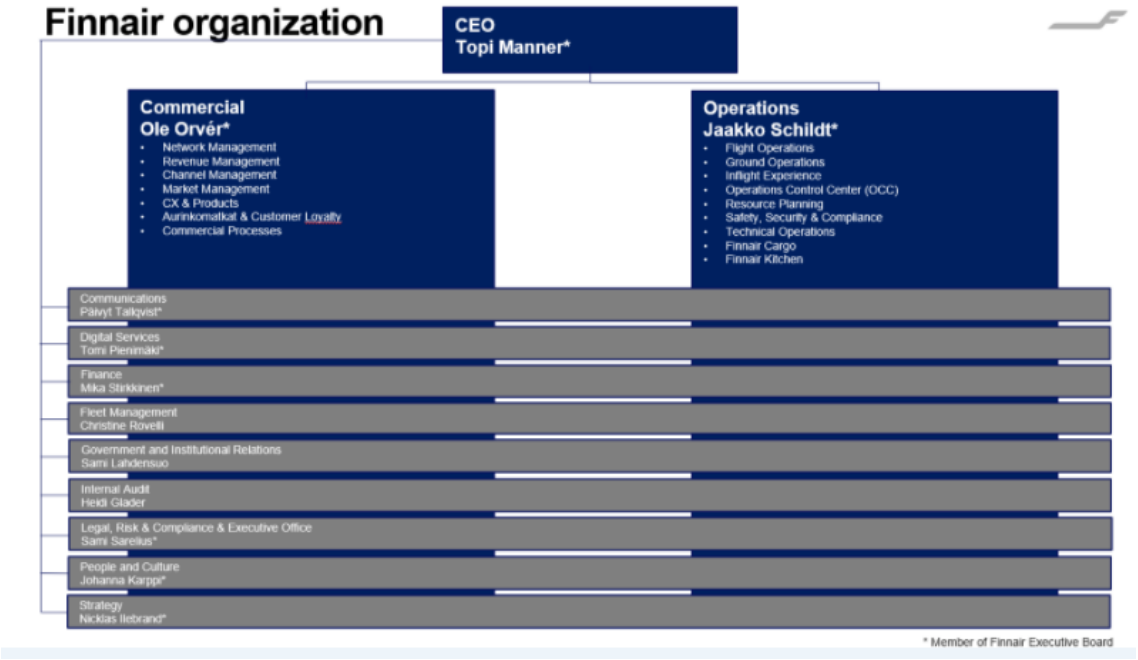

Figure 1. Finnair organization chart (Finnair internal presentation).

As shown from the organization chart above, all operative departments are in the Operations unit. Certain parts of operations require regulatory approval and each approved function has a nominated person who is accountable for their function.

When applying for Air Operator Certificate, the operator must provide information about their proposed operating model, types and number of aircrafts, description of the management system, the names of nominated persons, and a copy of the operations manual. (EASA 2021)

Figure 2 below, displays the AOC (Air Operator Certificate) organization of Finnair.

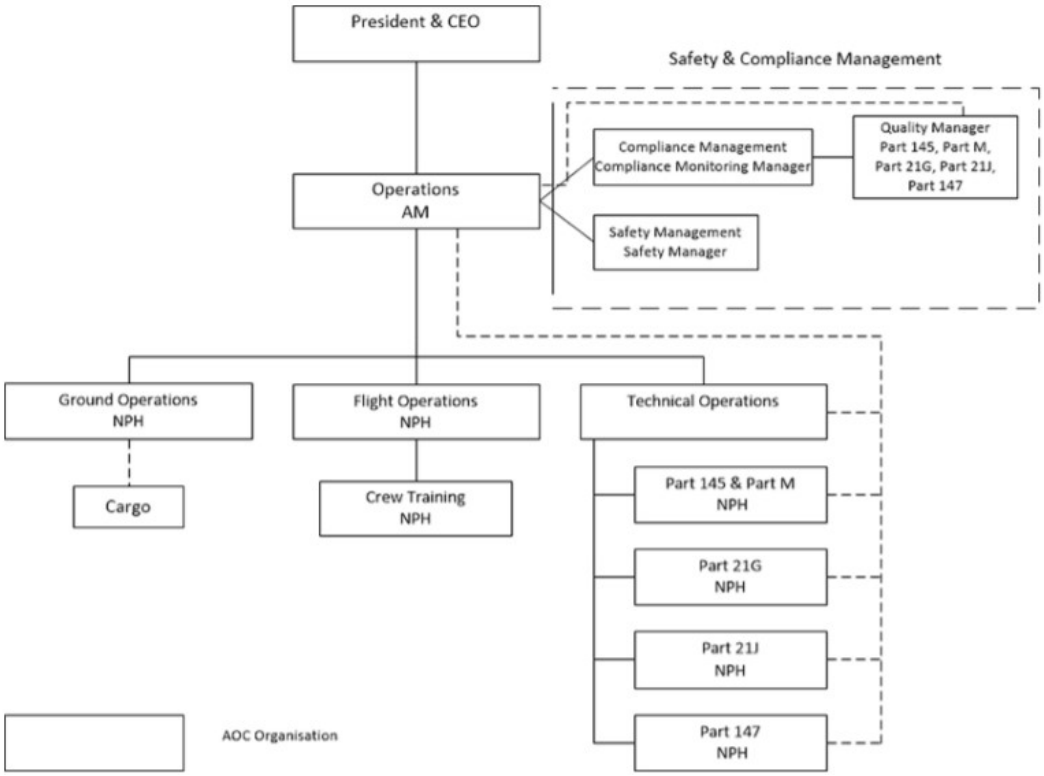

Figure 2. AOC Organization (Finnair internal presentation).

1.2 Business Challenge, Objective, and Outcome

Currently, the business challenge for the Operations unit is the compliance monitoring model for contracted services. Currently, the compliance monitoring model for contracted services is not defining well the complexity of activities, monitoring elements, and responsibilities between different parties, leading to excessive workload for the Safety, Security, and Compliance Management since the only recognized compliance monitoring element is auditing. It means that all contracted services are treated in the same way, despite their different complexities and impact on flight safety, causing excessive workload for all organizations. This model was however well functioning for several years since there was always a possibility to travel to on-site and audit service providers. However, due to the COVID-19 impact, this has also dramatically changed.

For monitoring of contracted services, industry standards provide guidance regarding the auditing, review of reported hazards and occurrence, following up with relevant key performance indicators, and governance meetings and processes. (IOSA ISM ed. 13 2019) Currently, among these methods, auditing and systematic review of reported occurrences are working effectively and these are performed by Finnair's Safety,

Security, and Compliance Management. The downside of these methods is that audit is just a snapshot that is performed as a default every two years. Reported occurrences are based on outsourced partners reporting culture e.g. they may not report openly. Other elements are in the area of responsibility of line organization e.g. monitoring of KPI's, however, these methods are not clearly documented.

The objective of the thesis is to create a compliance monitoring program model of contracted services, which would take into account complexity thus impact flight safety and defines monitoring elements and responsibilities, and which would also be acceptable for the competent authority. It also improves visibility for the overall quality of contracted services and clarifies the governance model in the Operations unit.

The outcome is a compliance monitoring program model of contracted services.

This model will help Finnair's Operations unit because it clarifies monitoring elements and responsibilities between different stakeholders. The model will be documented in approved process manuals.

1.3 Thesis Outline

The scope of the thesis is limited to Finnair's outsourced contracted services, which are for example ground handling, de-icing/anti-icing, and aircraft maintenance. Due to different regulation backgrounds for ground handling and aircraft maintenance, the focus will be on ground handling activities. Aircraft maintenance is regulated by EASA (European Aviation Safety Agency) and each maintenance provider in the European Union must have EASA Part-145 approval. Ground handling is lacking regulation; therefore, the Operations unit will get more benefit when focusing to improve the compliance monitoring model for ground handling activities.

This thesis is written in seven sections. Section 1, Introduction, describes the background and overviews the thesis. Section 2, Method and material explains how the study is conducted. Section 3, Current state analysis, investigates the current practices of the monitoring of outsourced service providers in the case company. Section 4, Existing knowledge/Best practice, overviews best practices from the aviation safety regulations and standards and topics of responsibility assignment and action priority matrixes. Following the best practices, the section is suggesting a conceptual framework for the compliance monitoring model. Section 5, Building the proposal for the case company by

utilizing the conceptual framework, proposes an improved monitoring process. Section 6, Validation of the proposal, is presenting the results of the validation process of the proposed model. Section 7, Conclusions, concludes the thesis and is proposing the action plan for future consideration.

2 Method and Material

This section describes the research approach, research design, and data collection and analysis methods used in this Thesis.

2.1 Research Approach

For this thesis, the selected research approach is Action Research (AR). Action research is used for solving business challenges in organizations by close cooperation with the researcher and the company. (Coughlan et al. 2002)

The core feature of action research is the collection of relevant information from different sources and reusing that data in the collaborative process with the team participating in the development. The company will benefit from this along the way since the learning process is included in the iterative process. Participants at this iterative process are challenged to critically view and revise the working methods subsequently leading to a successful change to the organization. (French 2009)

To start with a concrete action research project, it is necessary to gather information, assess the current situation, and develop a conceptual framework that will allow the research cycle to begin. For this reason, the qualitative research method was used in this thesis to collect information and assess the existing situation of the target organization. Qualitative research is emphasizing words instead of numerical values during the information collection and analysis phase. (Bryman & Bell 2003)

Qualitative research allows the target group members to express their opinion of their feeling regarding the subject being studied. Numerical responses can seldomly cover the whole phenomenon being investigated, but rather try to get a broader view of the specific matter. The qualitative data collection method can provide richer results, due to target group members in the study are provided with the opportunity to describe their personal feelings and ambitions for the subject being studied. (Walker 2010)

Methods used in qualitative data collection may consist of interviews, case studies, process and documentation studies, and observations. The researcher is listening and

collecting verbal data and accessing existing documentation instead of screening loads of numerical data. (Haslam and McGarty 2003)

The information collected for qualitative research can be considered structured or unstructured. A structured data collection method is using questions such as the “yes-or-no” type (Walker 2010), unlike the unstructured method where the researcher is using an open-ended question. Both methods were used in this study, the structured Forms survey for a wider audience and the unstructured interview method for the stakeholders.

This study follow the Action research methodology and focuses on a particular business challenge that appears in the cross-functional business process of the case company. This research is not aiming to create a theory or general knowledge building. The aim is to propose a compliance monitoring model and to produce an implementation plan for the case company. Stakeholder commitment is the main success factor for this study, everything is driven by processes in the airline industry and several monitoring elements produce some form of data as an output.

2.2 Research Design

The study starts by setting up the objective and continues to the current state analysis. Research design is based on three main streams: Stakeholders, Processes, and Data sources.

Figure 3 shows the research design of this study.

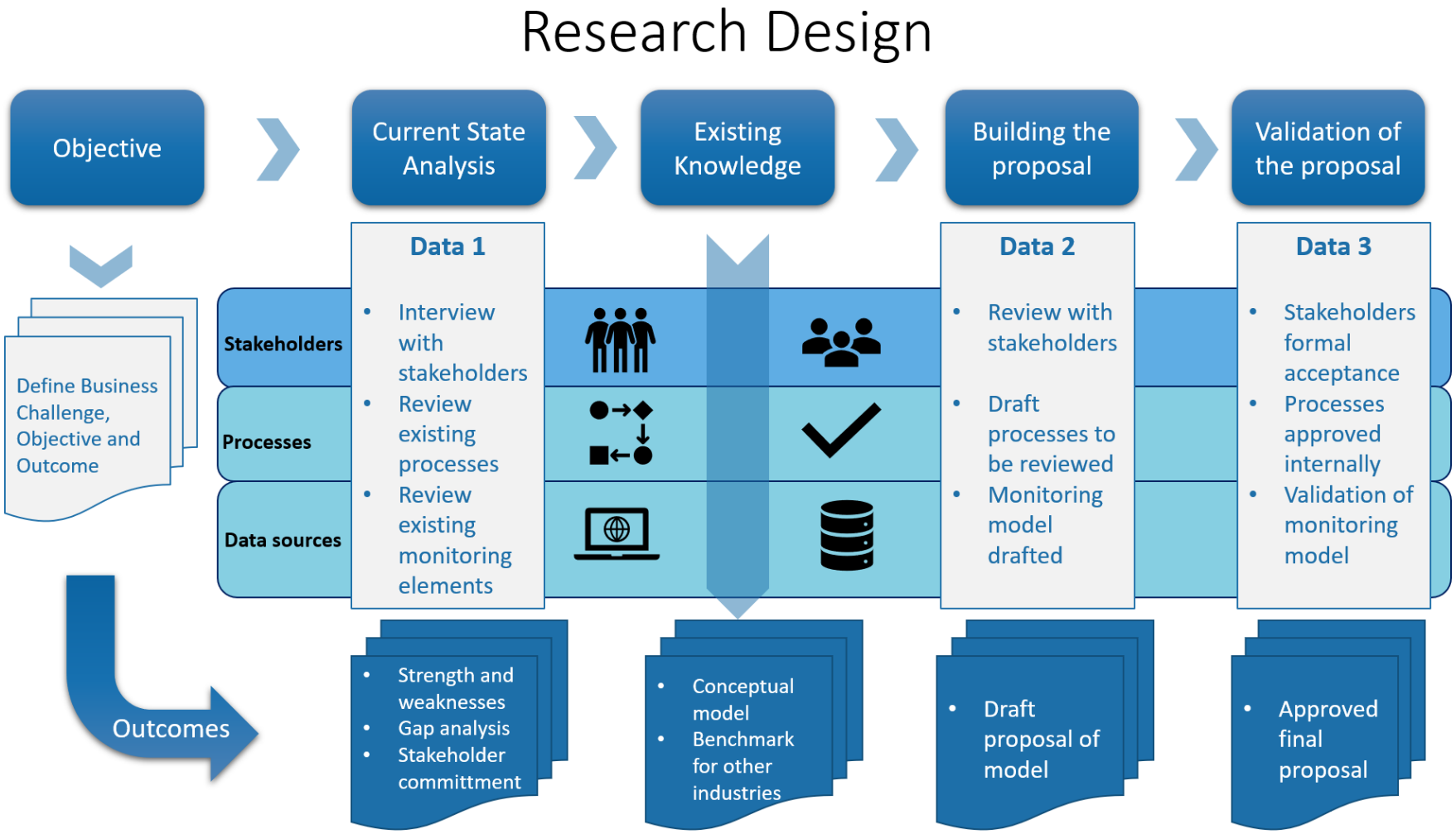

Figure 3. Research design of this study.

As shown in Figure 3, the current state analysis is done by conducting interviews, process review, and identifying existing compliance monitoring elements. As an outcome, strengths and weaknesses are identified, gaps identified, and that stakeholders are committed to the improvement of the compliance monitoring model. Following the current state analysis, search for existing knowledge is performed by literature review and benchmarking other monitoring models in the other industries.

Following that, the proposal is built and presented to stakeholders. After the required adjustments, the proposed processes can be approved internally and by the Finnish Civil Aviation Authority.

2.3 Data Collection and Analysis

The data for this study is collected in three stages which are: (Data 1) current state analysis, (Data 2) building of proposal, and (Data 3) validating the proposal. Data is collected through interviews, Teams meetings, and surveys. Figure 2 below presents details of the data collection in this study.

	1.WHICH TOPIC? WHY? (CONTENT & TARGET)	2.WHAT DATA? WHERE from? (DATA SOURCES)	3.WHO? (INFORMANT)	4.WHEN? (TIMING)	5.DOCUMENTED AS
Data 1 Current State Analysis	• Stakeholder engagement • Process review for +/- • Monitoring elements review	• Interview and set of questions • Current process manuals (SCMM, GOM) • Different data sources	• Senior Manager/Managers Ground OPS • Senior Manager/Managers, Safety, Security and Compliance	• April 2020-February 2021	• Meeting minutes • Questionnaire
Data 2 Proposal Building	• Review conceptual framework for stakeholder acceptance • Review draft processes for stakeholder acceptance	• Conceptual framework excercise • Monitoring elements modeling	• Senior Manager/Managers Ground OPS • Senior Manager/Manager, Safety, Security and Compliance	• March-April 2021	• Meeting minutes • Documented acceptance for draft processes and conceptual framework
Data 3 Validation	• Internal process approval • Stakeholder buy-in	• SCMM and GOM • Regulations • Monitoring model	• Senior Manager/Managers Ground OPS • Senior Manager/Managers, Safety, Security and Compliance	• April 2021	• Meeting minutes • Documented acceptance

Figure 4. Data 1-3 collection (plan) for this study.

As seen in Figure 4, in this study, the data is collected from three data sources; interviews and surveys, analysis of the internal documentation, and review of existing monitoring elements. The data is collected from department's who are using contracted services within the case company to understand the business problem deep enough. The focus area is on in-depth interviews with the stakeholders but also surveys are used to collect data from a wider audience.

Table 1. Details of Data collections 1-3 used in this study.

	Participants / role	**Data type**	**Topic, description**	**Date, length**	**Documented as**
	Data 1, for the Current state analysis (Section 3 or 4)				
1	Respondent 1: Manager, Ground OPS	Teams meeting	Interview regarding the contractor compliance monitoring elements and improvement proposals	May 2020, 2 hours	Field notes
2	Respondent 2: Senior Manager, Ground OPS	Teams meeting	Interview regarding the contractor compliance monitoring elements and improvement proposals	May 2020, 2 hours	Field notes
3	Respondent 3: Manager, Ground OPS	Survey/Teams meeting	Survey/Interview regarding the contractor compliance monitoring elements and improvement proposals	May 2020, 2 hours	Survey responses/ Field notes
4	Respondent 4: Manager, Safety and Compliance Management	Survey	Survey regarding the contractor compliance monitoring elements and improvement proposals	May 2020, 1 hour	Survey responses
5	Respondent 5: Senior Manager, Safety and Compliance Management	Survey	Survey regarding the contractor compliance monitoring elements and improvement proposals	May 2020, 1 hour	Survey responses
6	Respondent 6: Manager, Aircraft Maintenance	Survey	Survey regarding the contractor compliance monitoring elements and improvement proposals	May 2020, 1 hour	Survey responses
7	Respondent 7: Senior Manager, Airport and Ground Services Procurement	Teams meeting	Interview about current process related to the procurement of contracted services	January 2021, 1 hour	Field notes
8	Respondent 8: Manager, Safety and Compliance Management	Survey	Survey regarding the contractor compliance monitoring elements and improvement proposals	Feb 2021, 1 hour	Survey responses
	Data 2, for Proposal building (Section 5)				
9	Respondents 1-3, 5 and 8	Teams meeting	Proposal building	March 2021, 1 hour	Teams meeting recording
	Data 3, from Validation (Section 6)				
10	Respondents 1-3, 5, 7 and 8	Teams meeting	Validation, evaluation of the Proposal	April 2021, 1 hour	Teams meeting recording

As seen from Table 1, data for this Thesis was collected in three rounds. The first round, collecting Data 1, was conducted for the current state analysis. Answers were recorded to the spreadsheet and to the Microsoft Forms platform. The interviews were conducted as semi-structured, online interviews, held by the Teams platform, with questions created in advance. The interviews were recorded, and the field notes were taken. The questions for interviews can be found in Appendix 1. The list of interviewees and interview dates can be found in Appendix 2.

In the next round, Data 2 was collected to gather suggestions from the stakeholders for developing the proposal. This data included the presentation of the proposed compliance monitoring model for stakeholders.

In the third round, Data 3 was collected when conducting validation of the initial proposal. Data 3 included feedback for the proposal from the case company/ unit.

Table 2. Internal documents used in the current state analysis, Data 1.

	Name of the document	**Number of pages**	**Description**
A	Safety and Compliance Management Manual (SCMM)	111 pages	Safety and Compliance governance and processes
B	Ground Operations Manual (GOM)	708 pages	Ground Operations processes
C	Service Level Agreement appendix	7 pages	Service level requirements for contractor
D	Finnair Company Hub instructions: Sourcing & New Supplier selection	Master page including subsites	Processes related to supplier selection

As seen from Table 2, this study also reviewed several internal documents. The documents were reviewed for Data collection 1 round, the current state analysis, to get an understanding of the current process state and how well monitoring elements are defined, and what are the interfaces between other documents.

Due to finding that there is no existing process description at the Operations level between different stakeholders, a process map was drafted by the researcher to get a better understanding of the overall process. Also due to this reason, the biggest part of the data analyzed was based on interviews and surveys. Thus, the main method of data analysis was the Thematic/content analysis.

2.4 Thesis Evaluation Plan for Research Quality Criteria for This Thesis

Reliability and validity plan is part of this study aiming to ensure that the reader could consider the research report as trustworthy and trust the reliability of provided information.

The validity compares the findings based on the original research problem (Quinton and Smallbone 2006). Also, validity ensures that elements used in the research such as a collection of the data, review of the company internal data, and interviews were focusing to solve the research problem.

The validity of this study is to be verified by checking that data used is focusing on the original research problem. Another consideration is that an adequate number of interviews are conducted, they are well executed based on relevant questions and field notes are well documented.

The reliability evaluates if the results of the research would be the same even repeated in a different context, research team, or composition of team members (Quinton and Smallbone 2006).

The reliability of this study is supported by collecting relevant information which is focusing on the findings. Reliability is also ensured by interviewing the relevant stakeholders who are familiar with the business context and the research problem.

The findings from the current state analysis are discussed in Section 3 below.

3 Current State Analysis of Compliance Monitoring model

This section discusses the results of the current state analysis of the current compliance monitoring model.

3.1 Overview of the Current State Analysis

The current state analysis was conducted by interviews and surveys, analyzing the internal documentation, and examining the current process. The goal of the current state analysis was to identify the strengths and weaknesses of the current practices in managing contracted services, and evaluate the process maturity, as well as to identify elements are working well, and which may need some improvement.

First, interview questions were created to elicit the relevant data. Second, interviews and surveys were conducted. Concurrently, the existing company documentation was analyzed, and some supporting questions were asked to get more details regarding the documentation and processes. Based on that, the process map was compiled based on findings and observations, and it was used as a supporting document for additional questions and identifying strengths and weaknesses.

3.2 Description of the Current Compliance Monitoring Model

Currently, the Operations unit is responsible for signing the contract with contracted services and following up that they perform services by contract. The procurement department is supporting the Operations unit and is the holder of approval policy e.g. providing a financial framework. The Safety, Security, and Compliance department is part of the Operations unit and is responsible for monitoring compliance with relevant regulations and requirements.

Procurement unit personnel who are supporting the Ground operations employs 6 people and Ground Operations unit personnel managing contracted services is 9 people. Safety, Security, and Compliance Management personnel who are performing compliance monitoring consist of 6 people.

In the course of the current state analysis, it was found that there is no cross-functional process description regarding the compliance monitoring model. Therefore, the process

was first mapped to figure out the functionalities, interfaces, and effectiveness of each function.

The colors of the map indicate the effectiveness of each function based on interviews, observations, and findings. Green color indicates a well-functioning process, yellow color indicates functional process although some improvement may be needed, amber color indicates process where improvement is required. The thesis is focusing on yellow and amber parts. The process map is illustrated in Figure 5 below.

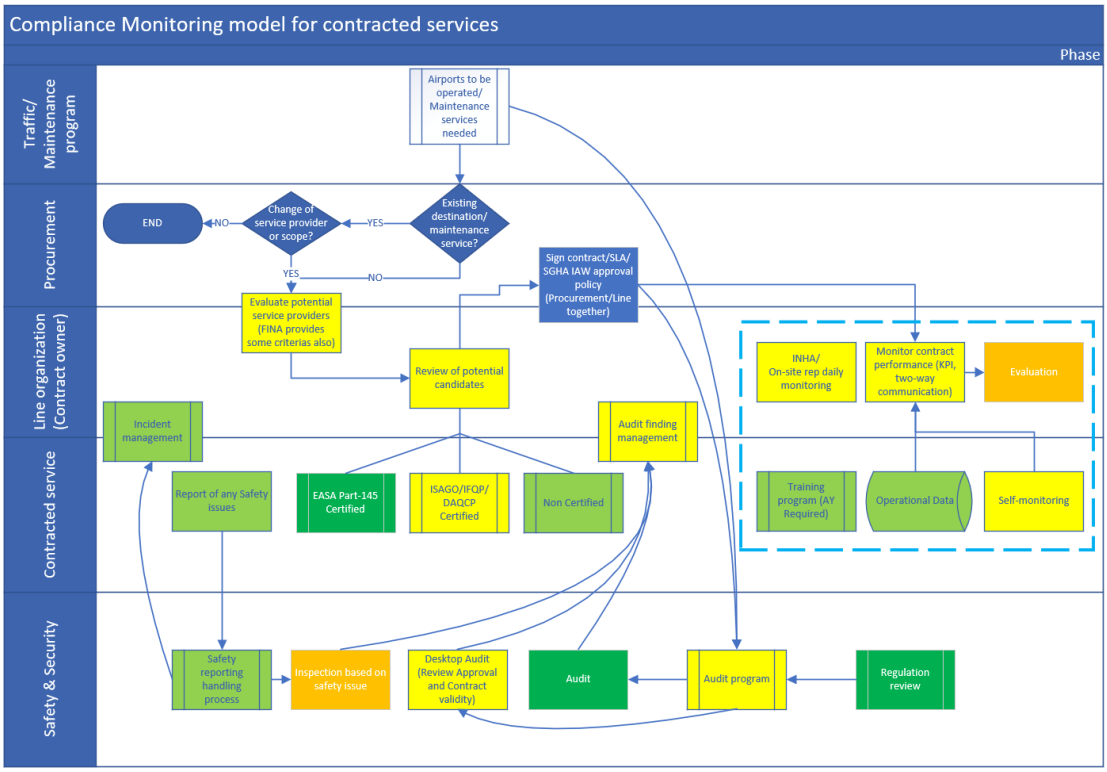

Figure 5. The current state of the Compliance monitoring model.

Each function is explained in more detail below.

3.2.1 Traffic/Maintenance Program

The traffic program of an airline is the key planning input for Operations unit production planning. Airports to be operated and utilization of aircrafts impacts everything that Operations unit is doing. In the case of new airports, capabilities for ground handling need to be evaluated and contracts need to be in place. Aircraft utilization is

consequently impacting aircraft maintenance programs, and due to limited internal maintenance capability, other maintenance vendors need to be used.

Traffic planning is a very complex system, involving demand planning, profit forecast calculations, and many other feasibility criteria.

As shown in Figure 5, there is a straight input to the Procurement and consequently to the Ground Operations when the new destination or existing destination frequency is increased. Also, there is a link to Safety, Security, and Compliance Managements Audit program.

3.2.2 Procurement

Procurement evaluates potential service provider candidates together with stakeholders concerning financial constraints, compliance, background, etc. Ground operations usually make procurement decisions with the help of Procurement. Contracts are signed together with the service provider, Procurement, and Ground operations.

For contract performance follow-up, weekly-monthly-quarter meetings are held with the stakeholders. If there are any escalations from the contract performance follow-up meetings, these are documented, and actions are performed accordingly.

Although some generic compliance background check is done, there is no evaluation of the service provider quality systems nor ISAGO (IATA Safety Audit Ground Operations) membership.

3.2.3 Ground Operations

In addition to procurement decisions described above, the Ground Operations monitors the performance of service providers. Feedback is given to procurement in case of poor performance. Safety and compliance-related concerns are raised also.

The monitoring process is described by Interviewee 1 and 2:

> *Area managers monitor qualitative measures e.g. bags left behind, punctuality. Safety and compliance is followed up by incidents and SCM feeds data by audit reports. This data feed is used for procurement decisions. (Interviewee 1)*

> *Global area organization, with area manager who is responsible of own stations service, safety, security and compliance. Area manager may have own staff or focal point from contractor. GOPS at HOTT monitors overall performance and handles governance. (Interviewee 2)*

Performance KPI's are followed, e.g. punctuality, left behind baggage, aircraft zero-damage, and customer satisfaction which can be found from the service level agreements. The Area Manager's scope of work is beyond 7 days in the operative window, from present to 7 days network stations are monitored by Operations Control Center.

Each Area Manager is responsible for their respective area monitoring and during absences covering colleague's area. The number of stations and the nature of the stations varies quite a lot between Area Managers, but by harmonizing ways of working and monitoring practices they have been able to balance the workload better. Due to summer destinations, there is a higher workload during the summer.

Since Safety, Security, and Compliance Management is performing monitoring by utilizing auditing, it means that audit findings are generated from each audit. As mentioned above, in addition to seasonal workload, also audits are usually performed with this busy season which generates additional workload for managing findings together with service providers.

To verify comments regarding the workload and especially towards seasonal variation, statistics from the safety and compliance database (Q-pulse application) were reviewed. Q-pulse has been used already more than 10 years, but for the relevant amount of data, four previous years were reviewed.

It was interesting to know, how many audits and findings were performed in the Ground Operations domain. Figure 6 below displays data from the year 2017 to 2020.

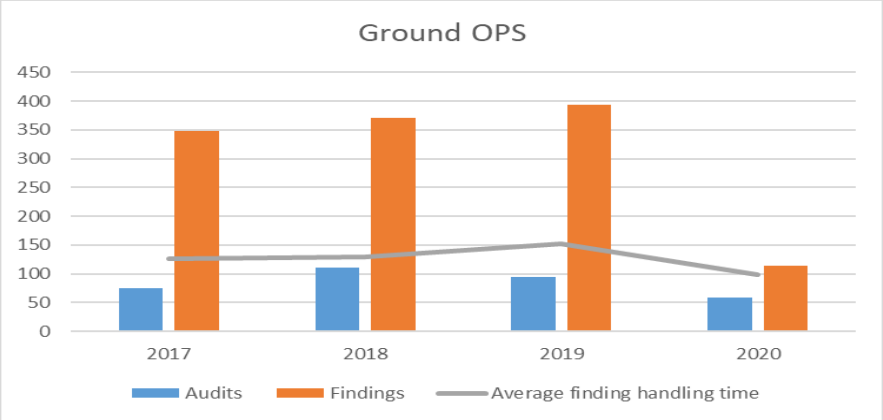

Figure 6. The year 2017-2020 statistics for Ground OPS Audits and Findings.

As shown in Figure 6, the years 2017-2019 were still part of the continuous growth. The impact of COVID-19 can be seen from the year 2020. At the peak year 2019, 95 audits were conducted resulting in 393 findings and finding average handling time was 152 days.

To verify correlation with seasonal variation, each audit finding 'raised date' was matched against each year's quarter. Figure 7 below indicates that most of the findings are raised during Q2 and Q3.

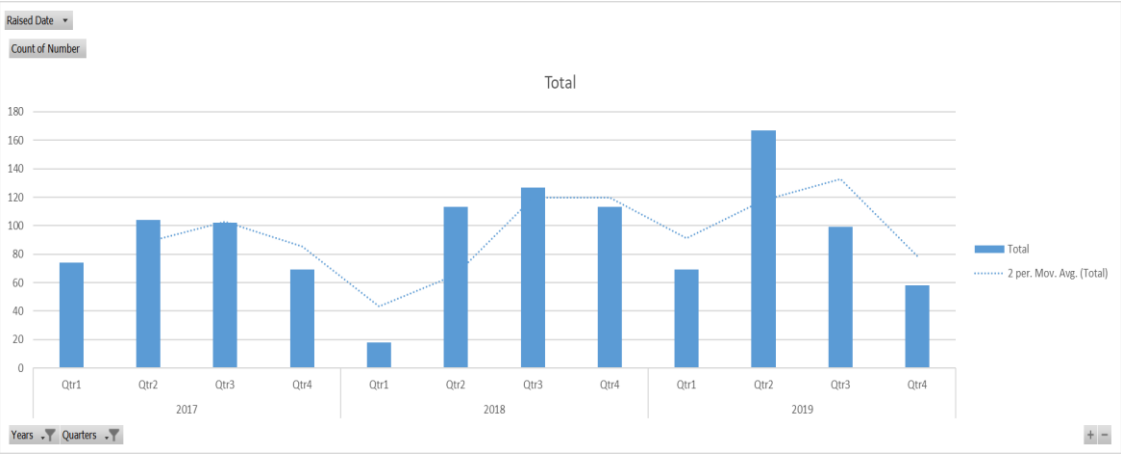

Figure 7. Seasonal variation of audit findings raised.

Based on the data above, seasonal variation can be confirmed against interview comments.

3.2.4 Service Provider

At an industry level, airport ground handling is considered a self-regulated industry. There is the ongoing activity by EC (European Commission) to include also Ground Handling providers in the scope of EASA (European Aviation Safety Agency) regulations. Due to the slow implementation of the regulatory implementation process, it is expected to take few years before it is implemented at the EU level.

The role of the IATA (International Civil Aviation Association) has created an industry-level standard template for the Ground Handling agreement. The agreement template is named the IATA Standard Ground Handling Agreement (SGHA). The SGHA is an industry-level contract template, which is widely used since the first revision was published in 1993. (IATA 2018). Finnair is using the SGHA template as a basis for all ground handling contracts.

Therefore, ground handling work is well standardized by IATA SGHA (Standard Ground Handling Agreement). GOM (Ground Operations Manual) mandates SLA for each contractor, which defines a framework for KPIs. Ground Operations Manual also provides training requirements for service providers and provides operating procedures for safe ground operations. Each contract is also having separate safety and security-related clauses as required by IOSA (IATA Operational Safety Audit). Each service provider is responsible for reporting and incidents or near-misses concerning Finnair operations.

Usually, these several requirements already narrow down potential service providers during the procurement phase. There are some bigger players e.g. Menzies, Swissport who have many stations and they are a member of ISAGO. This brings benefits through standardization and procedures since the Finnair GOM is based on IATA GOM (IGOM) so in case the service provider is a member of ISAGO, they are familiar with a manual basic structure. Some service providers have implemented a self-monitoring process where they evaluate their performance and record this data frequently. This data can be shared with Ground operations as well.

ISAGO (IATA Safety Audit Ground Operations) has benefits such as:

- *Improved safety and cut in costs by reducing ground accidents, injuries, and delays*
- *An accepted alternative to the multiple audits providers are subject to today*

- *Highest quality audits conducted in a standardized and consistent manner, using internationally recognized auditing principles*
- *Equivalence in the scope of audits conducted by airlines*
- *Standardization in ground operations*
- *Global recognition and acceptance*

(IATA ISAGO 2021)

Many ground service providers have already registered as ISAGO members, some have other quality system accreditation e.g. ISO9001 and some do not have any internal quality system.

3.2.5 Safety, Security and Compliance Management

Safety, Security, and Compliance Management is managing compliance monitoring and subsequently an audit program, this includes internal and external auditing. As explained earlier, a traffic/maintenance program is giving one input for an audit program that defines which service providers need to be audited. Regulations do change from time to time, which may also give some inputs to audit programs or procedures in the auditing.

> *Within our department, we monitor contractors through auditing, inspections, and following up reports received from or about the contractors. Also frequent communication with contract owners. (Interviewee 8)*

The audit has been the primary compliance monitoring element in Finnair operations, therefore audit practices are well developed and established. Before the time of COVID-19, practically all audits were done on-site, meaning that a lot of traveling took place. Impact of COVID-19 forced audits to be done by using remote or so-called desktop auditing. This hasn't been used much in a past, but due to global travel restrictions took place, this practice was required to exercise now fully.

Another element of monitoring is safety assurance. Each service provider is responsible for reporting and incidents or near-misses concerning Finnair operations. Safety, Security, and Compliance Management receive safety reports, handles them by performing risk assessment, adding classifications for safety performance follow-up purposes, and defines required actions. Based on Safety and Compliance Management Manual, inspections could be used as a monitoring element in case of repeating safety issues.

3.3 Analysis and Key Findings from the Current State Analysis

The main finding from the analysis is that the current description of the compliance monitoring program in the SCMM (Safety and Compliance Management Manual) is focusing on auditing and the risk-based model is optimizing audit interval. Although it is mentioned that evaluations and continuous monitoring are carried out by line organization, the description does not include interfaces and responsibilities between different parties.

However, based on interviews, respondents agree that traditional monitoring elements are working well.

3.3.1 Findings from the Traffic/Maintenance program

The traffic program itself was not evaluated during the research. However, based on interviews there is huge seasonal variation e.g. Mediterranean, Caribbean destinations causing significant workload for Area Managers. As understanding the complexity of traffic planning, it was left out of the scope of this thesis.

> *Summer season is hardest as tens of stations opening and closing within a short period and in many cases, the contractor is a small player and fully occupied with work during the season and not able to full fill our requirements. This has improved during the last few years as we have set also the same, standardized, actions to be used with seasonal destinations and used practices (e.g monitorings and meetings) compared to traffic volumes. (Interviewee 3)*

3.3.2 Findings from Procurement

When reviewing the sourcing and procurement processes from their respective SharePoint pages, it was found out that there is an existing process description which is also mentioning compliance status review and links to the supplier risk assessment checklist.

However, when interviewing informants, it was found out that process was not followed, and the risk assessment checklist was only used in bigger changes.

ISAGO is not used as a selection criterion for service providers.

3.3.3 Findings from Service Provider

The scope of the thesis was to find out strengths and weaknesses in the internal compliance monitoring model, therefore service providers were not evaluated.

3.3.4 Findings from Ground Operations (Line Organization)

Based on interviews, it was found out that the Area Manager process and tools for monitoring are not at a sufficient level. Although many practices exist, there is no documented process. Besides, there is no centralized database for safety, compliance, quality, and contract SLA-related issues.

> *Many times, our current tools are not supporting properly the need, and compromises need to be done on actions. (Interviewee 3)*

However, Ground Operations feel that there should be more credit given for their monitoring process in the risk-based auditing model. Ownership of safety and compliance-related matters is not always clear, which may result in confusion between different parties.

> *There should be criteria and data supporting this. Check lists, turnaround data should be used. This should be documented process to gain trust between line and SCM. (Interviewee 2)*

> *SCM should be more facilitator and enabler for line organization. Area manager evaluation should have a bigger weight. Current governance does not support this fully. (Interviewee 1)*

> *It would be an outcome of internal data collection (reporting, auditing, monitoring, task lists, etc). But also some personal relation to the stations as visiting stations, meeting people and interviewing them, scheduled, gives the best understanding about overall status. Another valuable asset is contracting and how much weight we can put on this in the contract. (Interviewee 3)*

3.3.5 Findings from Safety, Security, and Compliance Management

Safety, Security, and Compliance Management developed a risk-based auditing model a few years ago which was designed to consider many parameters regarding safety and compliance. This was based on historical data and expectations of continuous traffic growth. Since the audit intervals were optimized based on data, inspections were not used that much for reacting to safety issues.

> *Audits are conducted against the contract and results are recorded in Q-Pulse. This does not replace monitoring which should be done by line organizations. Proper analysis is not done except for risk-based audit interval definition. This is not enough. (Interviewee 5)*

Parameters used in the risk-based auditing are; 1) Safety risk (Event Risk Classification of reported incidents within audit interval), 2) Compliance risk (Cumulative compliance risk value of audit findings), 3) Management system performance (Organization's capability to manage findings), 4) Exposure to flights or maintenance input (Flights in year/Maintenance inputs), 5) Performance (Area manager evaluation score), 6) Complexity (Service providers scope of work) and 7) Safety culture (Service providers reporting culture).

Due to COVID-19 impact on flight operations, flights to destinations have been drastically cut. This means, that for a year there is no sufficient amount of data required for scoring of different parameters. Performance is one equal parameter used which is referring to the Ground operations Area manager's continuous monitoring. When there are no on-site audits, the only reliable information is safety reporting data and the Area manager's evaluation.

3.3.6 Strengths and Weaknesses of the Compliance Monitoring Model

Strengths

The process of the monitoring model begins with procurement activities together with the Ground Operations. The first strength is that both units are well aligned with activities conducted, meaning that their co-operation is working well. Second, Ground Operations sees ISAGO as a positive standard for service providers, this has been evaluated before but at that time ISAGO was not yet matured program. Third, the basic turnaround

concept is well defined due to the SGHA structure, this makes it easier to define contract scope with the service provider. Fourth, there are plenty of operational data and metrics available for Ground Operations and Safety, Security, and Compliance Management; however, this data is not utilized in the best possible way. Fifth, there are good meeting practices with bigger ground handling players (e.g. Menzies, Swissport) where data can be shared freely, these lessons learned can be used also with smaller contractors. Sixth, in the Asian stations there is more focus on quality issues, meaning that even though stations are geographically far, quality and compliance are taken very seriously there. Seventh, traditional monitoring elements e.g. auditing are working well, this was evident from all stakeholder's interviews. Eighth, traditional monitoring elements can be a cost-efficient monitoring solution and it is a fully compliant way by relevant regulations.

Weaknesses

The first weakness identified in the procurement phase is that compliance status including ISAGO membership is not evaluated, which can add workload in the later stage of the service provider lifecycle. Second, the supplier risk assessment checklist is only used in bigger changes, this could be done in conjunction with initial service provider evaluation. Third, there is seasonal variation in the monitoring workload, especially in regards to the management of the audit findings which usually is moving towards at end of the season. Fourth, there is no centralized database for safety, compliance, quality, and contract SLA-related issues which are adding workload for compiling relevant data from different data sources. Fifth, the process and tools for Area Managers monitoring their respective stations, are not at a sufficient level. Sixth, Ground Operations feels that Area manager evaluation should have higher weighing in the risk-based auditing. Seventh, management of the audit findings causes workload. Eights, ownership of safety, and compliance-related matters are not always clear for all stakeholders. Ninth, Ground Operations feels that Safety, Security, and Compliance Management should be more facilitator and enabler for the line organization. Tenth, Safety, Security, and Compliance Management is not using inspections proactively as a tool to react to safety issues. Eleventh, some of the risk-based auditing model elements have lost their significance due to COVID-19 impact on operations. Twelfth, the Risk-based auditing model is based on operational data; due to COVID-19 impact on traffic volumes, many elements have lost their significance. Thirteenth, responsibilities, and interfaces for contract monitoring are not well defined. Finally, the complexity of contracted services is not defined, and monitoring elements are not well described.

The summary of strengths and weaknesses is shown below in Table 3.

Table 3. Summary of strengths and weaknesses.

ID	Strengths	Weaknesses
1	Procurement is well aligned with GOPS	The compliance status of the service provider is not evaluated during the procurement phase
2	Traditional monitoring elements (e.g. safety reporting, auditing, risk management) are working well	ISAGO is not used as selection criteria during the procurement phase
3	Traditional monitoring elements can be a cost-effective solution from an OPS perspective	There is an existing supplier risk assessment checklist, but it's only used in bigger changes
4	The basic turnaround concept is well defined (SGHA structure)	There is seasonal variation in monitoring workload (summer destinations)
5	There are loads of operational data available, plenty of existing metrics	There is no centralized database for safety, compliance, quality, and contract SLA related issues
6	Meeting practices with bigger players where data can be shared freely	Area Manager process and tools, for monitoring their stations are not at a sufficient level
7	In Asian stations, more focus and accuracy for quality issues (Cultural differences)	Based on GOPS interviews, Area manager evaluation of service provider should have a higher value in risk-based auditing
8	GOPS sees ISAGO as a positive standard for GH providers	Handling of audit findings causes workload
9	N/A	Ownership of safety and compliance related matters is not always clear

10	N/A	SSCM should be more facilitator and enabler for line organization
11	N/A	SSCM is not using inspections proactively as a tool to react to safety issues
12	N/A	The risk-based auditing model is based on operational data; due to COVID-19 impact on traffic volumes, many elements have lost their significance
13	N/A	Responsibilities and interfaces for contract monitoring are not well defined
14	N/A	The complexity of contracted services is not defined, and monitoring elements are not well described

The following chapter introduces focus areas based on these findings.

3.3.7 Selected Focus Areas

Following weaknesses are selected as a focus area in study 1) Ownership of safety and compliance-related matters is not always clear, 2) Responsibilities and interfaces for contract monitoring are not well defined and 3) The complexity of the contracted services is not defined, and the monitoring elements are not well described.

4 Existing Knowledge and Best Practice in Monitoring Models

This section searched for available knowledge regarding the selected weaknesses discussed in Section 3 above. As discussed in Section 3, currently, the compliance monitoring model for the contracted services is not defining well the complexity of activities, the monitoring elements, and responsibilities between different parties.

Since the aviation industry is highly regulated, the literature review starts with an overview of existing aviation regulations and standards. Following that, a review of best practices regarding the responsibility assignment practices is done. Last, a review of best practices regarding the visualization for complexity and prioritization models is performed.

4.1 Ownership of Safety and Compliance Related Matters (Element 1)

Since Finnair is operating in the European Union, Finnair must comply with regulations laid down by European Commission. The structure of regulations is displayed below in Figure 8.

EASA
European Union Aviation Safety Agency

Latest information is available via https://www.easa.europa.eu/regulations
Including Acceptable Means of Compliance, Guidance Material (AMC/GM) and Certification Specifications (CS)
View our FAQ's via https://www.easa.europa.eu/the-agency/faqs

	IR: Implementing regulation DR: Delegated regulation	Annexes	
Basic Regulation	IR: (EU) 2018/1139		
Initial Airworthiness	IR: (EU) No 748/2012	Annex I: Part-21	
Additional airworthiness specifications for operations	IR: (EU) 2015/640	Annex I: Part-26	
Continuing airworthiness	IR: (EU) No 1321/2014	Annex I: Part-M Annex II: Part-145 Annex III: Part-66 Annex IV: Part-147 Annex Va: Part-T	
Aircrew	IR: (EU) No 1178/2011	Annex I: Part-FCL Annex II: Conversion of non-EU licences Annex III: Licences of non-EU states Annex IV: Part-MED	Annex V: Part-CC Annex VI: Part-ARA Annex VII: Part-ORA Annex VIII: Part-DTO
Air operations	IR: (EU) No 965/2012	Annex I: Definitions Annex II: Part-ARO Annex III: Part-ORO Annex IV: Part-CAT	Annex V: Part-SPA Annex VI: Part-NCC Annex VII: Part-NCO Annex VIII: Part-SPO

Figure 8. Regulation structure (EASA 2021).

> *Basic Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91* (EASA 2021).

Details for management systems for Air Operators, are described in Commission Regulation (EU) No 965/2012 of 5 October 2012 - Air Operations. Annex III (Part-ORO) describes general requirements for the operator.

> *ORO.GEN.110 Operator responsibilities: The operator is responsible for the operation of the aircraft in accordance with Annex IV to Regulation (EC) No 216/2008, as applicable, the relevant requirements of this Annex and its air operator certificate (AOC) or specialised operation authorisation (SPO authorisation) or declaration EASA Air Ops*) (EASA 2021)

> *ORO.GEN.200 Management system: The operator shall establish, implement and maintain a management system that includes (6) a function to monitor compliance of the operator with the relevant requirements. Compliance monitoring shall include a feedback system of findings to the accountable manager to ensure effective implementation of corrective actions as necessary; and (7) any additional requirements that are prescribed in the relevant Subparts of this Annex or other applicable Annexes. The management system shall correspond to the size of the operator and the nature and complexity of its activities, taking into account the hazards and associated risks inherent in these activities.* (EASA 2021)

Key regulatory reference for this thesis is mentioning the structure and complexity:

> *ORO.GEN.200(a)(6) (1) The operator should specify the basic structure of the compliance monitoring function applicable to the activities conducted. (2) The compliance monitoring function should be structured according to the size of the operator and the complexity of the activities to be monitored.* (EASA 2021)

Guidance material for complex operators is adding*:*

> *Guidance Material ORO.GEN.200(a)(6) (b) Operators should monitor compliance with the operational procedures they have designed to ensure safe operations,*

> *airworthy aircraft and the serviceability of both operational and safety equipment. In doing so, they should, where appropriate, additionally monitor the following: (9) ground operations;.* (EASA 2021)

As explained in the current state analysis phase, nowadays airlines do not have their ground handling anymore. Therefore, contracting activities are necessary. EASA also provides regulations and requirements for contracted activities.

> *ORO.GEN.205 Contracted activities (a) When contracting or purchasing any services or products as a part of its activities, the operator shall ensure all of the following: (1) that the contracted or purchased services or products comply with the applicable requirements; (2) that any aviation safety hazards associated with contracted or purchased services or products are considered by the operator's management system* (EASA 2021)

> *ORO.GEN.205 Contracted activities RESPONSIBILITY WHEN CONTRACTING ACTIVITIES (a) The operator may decide to contract certain activities to external organisations. (b) A written agreement should exist between the operator and the contracted organisation clearly defining the contracted activities and the applicable requirements. (c) The contracted safety-related activities relevant to the agreement should be included in the operator's safety management and compliance monitoring programmes. (d) The operator should ensure that the contracted organisation has the necessary authorisation or approval when required, and commands the resources and competence to undertake the task.* (EASA 2021)

> *(ORO.GEN.205 Contracted activities) (a) Operators may decide to contract certain activities to external organisations for the provision of services related to areas such as: (1) ground de-icing/anti-icing; (2) ground handling;* (EASA 2021)

Also, Finnair is a member of IATA (International Air Transport Association) and the OneWorld alliance. Therefore, Finnair must comply with IATA Operational Safety Audit (IOSA) which is performed every two years by accredited audit organizations.

> *The IATA Operational Safety Audit Program is an internationally recognized and accepted evaluation system designed to assess the operational management and control systems of an airline. The IOSA audit creates a standard that is comparable on a worldwide basis, enabling and maximizing the joint use of audit reports. This has saved the industry over 6400 redundant audits and continues to lead to*

> *extensive cost-savings for IOSA participating airlines. All IATA members are IOSA registered and must remain registered to maintain IATA membership.* (IATA 2021)

IOSA Standards and Recommended Practices manual includes approximately 1000 standards and recommendations which are audited by accredited audit organizations every two years. The latest revision is edition 13. There are many similarities with EASA regulations, however, IOSA is a global standard so there are some differences with EASA.

> *IOSA Standards are specified systems, policies, programs, processes, procedures, plans, sets of measures, facilities, components, types of equipment, or any other aspect of operations under the scope of IOSA that have been determined to be an operational necessity, and with which an operator will be expected to conform to the conclusion of an audit.* (IOSA ISM Ed. 13 2019)

IOSA ORG chapter describes quality control of outsourced operations as follows:

> *ORG 3.5.1: Such contract or agreement shall identify the application of measurable specifications that can be monitored by the Operator to ensure requirements that affect the safety and/or security of operations are being fulfilled by the service provider.* (IOSA ISM Ed. 13 2019)

> *ORG 3.5.2: The Operator shall have processes to monitor external service providers that conduct outsourced operational functions for the Operator to ensure requirements that affect the safety and/or security of operations are being fulfilled.* (IOSA ISM Ed. 13 2019)

> *ORG 3.5.2: Achieving and maintaining IOSA and/or ISAGO registration is a way for an external service provider to demonstrate fulfillment of requirements that affect the safety and/or security of operations. Thus, an operator's process that requires such service providers to maintain IOSA and/or ISAGO registration would be acceptable as a method of monitoring when such registration(s) is/are used in conjunction with a risk assessment of the provider. To ensure effective monitoring, consideration is given to a range of internal and external methods for use in the oversight of external service providers. Methods might include auditing, systematic review and risk assessment of reported hazards and/or occurrences, monitoring of performance output (KPIs), reporting and governance processes; monitoring and analysis of targeted risk areas, as well as the establishment of an effective two-way communication link with the service provider.* (IOSA ISM Ed. 13 2019)

4.2 Responsibilities and Interfaces for Contract Monitoring (Element 2)

The business process targets are achieved through clearly organizing ways of operating. To perform tasks systematically as planned, managing teams require authority, responsibility, and delegating. The authority that exists without responsibility is resulting in unaccountability (Serban 2017). To achieve desired results, the definition of authorities needs to be done clearly and delegated as necessary. The person who is having the authority is then responsible to achieve the desired results. Delegation of authorities should be done to share the workload and by utilizing the right skills on each task (Serban 2017).

Responsibility matrixes between different stakeholders are used in project management and especially in IT projects. RACI (responsible, accountable, consult, and inform) chart is one example of a responsibility assignment matrix. A responsibility assignment chart is a practical tool to ensure that roles and responsibilities are assigned correctly when the teams are cross-functional (Institue P. 2017).

There should be only one person accountable for a certain task. This person will carry the accountability for completion and success of the tasks, despite not performing the work itself. The accountable person shall identify those persons who are needed to achieve the desired output of a task, who are the responsible persons for performing the task. Responsible persons are usually also responsible for communication between all members in RACI. The definition of the “C” in the standard RACI model is usually considered as “consulted,” however it can be translated as “contributes.” Contributors are the subject matter experts for the tasks assigned, and some people need to stay informed, like stakeholders who may be impacted by the task but at that stage don’t need to make any decisions. (Costello 2012)

> *RACI isn’t just a planning technique or technology term. It’s an enterprise-wide mindset for properly distributing participation and expectations to efficiently accomplish work.* (Costello 2012)

EASA regulation defines the meaning of the terms accountability and responsibility as follows:

> *GM3 ORO.GEN.200(a)(1): In the English language, the notion of accountability is different from the notion of responsibility. Whereas 'accountability' refers to an obligation which cannot be delegated, 'responsibility' refers to an obligation that can be delegated* (EASA 2021)

4.3 Complexity and Monitoring Elements (Element 3)

The concept of the action priority matrix was inspired by renowned author and business leader Stephen Covey. In his bestselling book *7 Habits of Highly Effective People,* Covey described the so-called "four quadrants" (Covey 2004).

He introduced the 'First Things First' concept in his book, where the matrix of importance vs. urgency is used to decide in where to invest efforts. The concept of the matrix is shown in Figure 9 below.

	URGENT	NOT URGENT
IMPORTANT	Quadrant I *urgent and important* **DO**	Quadrant II *not urgent but important* **PLAN**
NOT IMPORTANT	Quadrant III *urgent but not important* **DELEGATE**	Quadrant IV *not urgent and not important* **ELIMINATE**

Figure 9. Habits Decision Making Matrix (Davidjcmorris 2018).

A similar approach was used by the 34th president of the United States Dwight D. Eisenhower, where "tasks are evaluated using the criteria important/unimportant and urgent/not urgent" (Linder 1999).

An Action Priority Matrix is a visual guide to make decisions and sets out clear priorities for tasks to be performed and to make time usage efficient for these tasks (Mulder, P. 2012).

Also, by visualizing the elements, there is a possibility to link results with the pare-to principle, where “is assumed that 80% of the productivity can be achieved by doing 20% of the tasks. Similarly, 80% of results can be attributed to 20% of activity” (Kevin Kruse 2016).

4.4 Conceptual Framework of This Thesis

Summing up, there was a challenge to find existing knowledge regarding the compliance monitoring models. The aviation industry is a heavily regulated so-called “ultra-safe” industry, where regulations are always amended after some accident takes place.

It seems that the aviation industry is well ahead of other industries in terms of safety and compliance monitoring practices. Therefore, the focus was on existing practices and how to improve those.

The conceptual framework of the thesis was designed around the suggestions from available knowledge identified during current state analysis and best practices. The conceptual framework consists of recommendations based on findings, the creation of a RACI table for monitoring elements, and an action priority matrix that displays different service providers and monitoring elements.

Compliance with regulations and IOSA standards is the foundation of the framework. The monitoring elements matrix includes also dimensions for complexity, criticality, and exposure which then defines the used monitoring element. Responsibility Assignment Matrix clarifies responsibilities for each monitoring element and displays interfaces between different stakeholders.

Figure 10 below shows the conceptual framework.

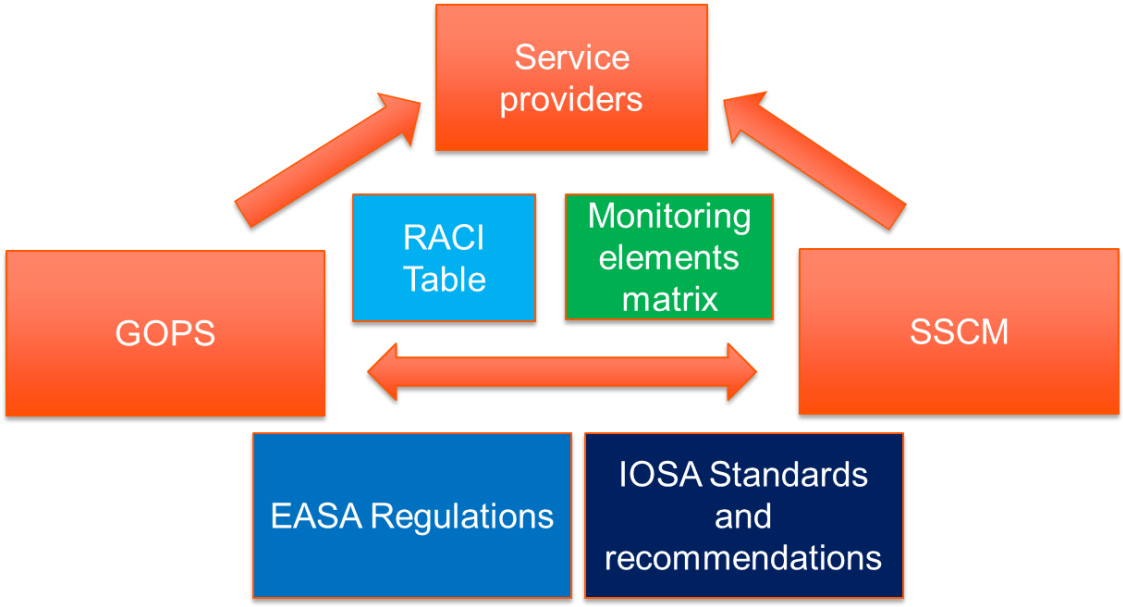

Figure 10. Conceptual framework of this study.

Based on this conceptual framework, a more detailed proposal is designed in the next section.

5 Building Proposal for Compliance Monitoring Model

This section combines the results of the current state analysis and the conceptual framework towards the building of the Proposal using Data 2.

5.1 Overview of the Proposal Building Stage

This section presents the steps in the Proposal building for this study. As found out in the current state analysis, responsibilities and interfaces for the contract monitoring are not well defined. Also, the complexity of the contracted services is not defined, and the monitoring elements are not well described. Auditing is used as a primary tool for compliance monitoring, although Ground Operations Area Managers are performing different activities for contract monitoring. Based on the results from the current state analysis, the focus for the improvement was selected so that to clarify monitoring elements used for different levels of complexities, responsibilities, and interfaces between stakeholders. With these focus areas in mind, a literature search was conducted to select best available suggestions for improvements. A conceptual framework was synthesized from these selected elements and relevant best practices were evaluated.

Proposal building started with discussing and revising the strengths and weaknesses from the existing monitoring model process with the key stakeholders. The CSA findings were collected and prioritized and their relevance for the business challenge was evaluated once again.

The first requirement for the model is that it must comply with relevant regulations and standards, which is self-explanatory in aviation. Second, regulations define that “the compliance monitoring function should be structured according to the size of the operator and the complexity of activities conducted” (EASA 2021). Third, due to COVID-19 impact on traffic volumes, one recommendation is to stop using the risk-based auditing model for audit interval definition. Due to this, some elements used in the risk-based model need to be incorporated into the proposed model. Therefore, it was required to have visualization which takes complexity/criticality/exposure into consideration.

Stakeholders were involved in the proposal building by internal meetings where discussion topics were around the thesis subject. This opportunity was used for asking opinions regarding some model-related questions. In data collection round 2, findings

from the current state analysis were categorized into logical groups, and suggestions were recorded. Since compliance with relevant regulations is the foundation, input from existing knowledge is used as regulation references.

Table 4. Key stakeholder suggestions (findings of Data 2) for Proposal building concerning findings from the CSA (Data 1) and the conceptual framework.

	*Key focus area from **CSA** (from **Data 1**)*	*Suggestions from stakeholders for the Proposal, summary (from **Data 2**)*	*Description of their suggestion (in detail)*	*Input from literature (**CF**)*
1	a) Compliance status of the service provider is not evaluated during the procurement phase b) ISAGO is not used as selection criteria during the procurement phase c) There is an existing supplier risk assessment checklist, but it's only used in bigger changes	a) Consider accepting ISAGO similar way as DAQCP/IFQP	De-icing and Fueling operators are not audited by SSCM, since they are part of audit pools. Only audit reports and alerts are reviewed as necessary. If Finnair would join ISAGO, then all the service providers who have valid ISAGO certificate does not need to be audited anymore.	ORG 3.5.2 Achieving and maintaining IOSA and/or ISAGO registration is a way for an external service provider to demonstrate fulfillment of requirements that affect the safety and/or security of operations. Thus, an operator's process that requires such service providers to maintain IOSA and/or ISAGO registration would be acceptable as a method of monitoring when such registration(s) is/are used in conjunction with a risk assessment of the provider. (IOSA ISM Ed. 13 2019)
		b) Create a simple risk assessment checklist for the procurement contract signing stage	This would add some checkpoints before signing the contract. Ground operations and SSCM should together create a simple risk assessment checklist for considering relevant topics e.g. ISAGO certification/ISO9001	Refer to above, risk assessment required.
2	a) Area Manager process and tools, for monitoring their stations are not a sufficient level b) Based on GOPS interviews, Area manager evaluation of service provider	a) Create area manager monitoring process	There are different ways of monitoring, emails, meeting practices, KPI monitoring; however, this process is not documented.	ORG 3.5.2 To ensure effective monitoring, consideration is given to a range of internal and external methods for use in the oversight of external service providers. Methods might include auditing, systematic review and risk assessment of reported hazards and/or occurrences,

	should have a higher value in risk-based auditing c) There is no centralized database for safety, compliance, quality, and contract SLA related issues			monitoring of performance output (KPIs), reporting and governance processes; monitoring and analysis of targeted risk areas, as well as the establishment of an effective two-way communication link with the service provider. (IOSA ISM Ed. 13 2019)
		b) Use safety culture survey/compliance evaluations as monitoring element in compliance monitoring model	Using of safety culture surveys and compliance evaluations can be accepted as part of the compliance monitoring model.	Refer to above
		c) Consider using Q-pulse for supplier-related information	Q-pulse is a system for recording safety and compliance-related reports. There is an existing supplier module that is not used currently.	ORO.GEN.220 Record-keeping (a) The operator shall establish a system of record-keeping that allows adequate storage and reliable traceability of all activities developed, covering in particular all the elements indicated in ORO.GEN.200 (EASA 2021)
3	a) Ownership of safety and compliance related matters is not always clear b) SSCM should be more facilitator and enabler for line organization c) Responsibilities and interfaces for contract monitoring are not well defined	Create a RACI table for monitoring elements	Displaying responsibilities and interfaces between stakeholders increases clarity for ownership. Also, it is easy to demonstrate during authority audits who is responsible for each monitoring element.	GM2 ORO.GEN.205 Contracted activities (a) Regardless of the approval status of the contracted organisation, the contracting operator is responsible for ensuring that all contracted activities are subject to hazard identification and risk management, as required by ORO.GEN.200(a)(3), and to compliance monitoring, as required by ORO.GEN.200(a)(6). (EASA 2021)
4	a) Risk-based auditing model is based on operational data; due to COVID-19 impact on traffic volumes,	a) Stop using risk-based auditing model, default audit interval 24 months for contractors	Due to slow ramp-up, it will take few years before data is stabilized and usable for audit interval definition	N/A Regulations does not give any guidance regarding the audit interval

	many elements have lost their significance b) Auditing process is optimized as monitoring element but increases finding management workload c) There is seasonal variation in monitoring workload (summer destinations)	b) Use Safety Reporting data as an input to inspections	The current risk-based auditing model does not react to repeating safety issues during audit interval, it only optimizes audit interval. If using focused safety inspections, problematic process areas can be better analyzed.	AMC1 ORO.GEN.200(a)(3) Management system (a) Hazard identification processes (1) Reactive and proactive schemes for hazard identification should be the formal means of collecting, recording, analysing, acting on and generating feedback about hazards and the associated risks that affect the safety of the operational activities of the operator. (2) All reporting systems, including confidential reporting schemes, should include an effective feedback process. (EASA 2021)

As seen from Table 4, the findings were grouped in a logical sequence. First, all procurement phase-related findings were collected. Second, all daily operations monitoring-related findings were collected. Third, findings related to interfaces between stakeholders were collected. Fourth, all compliance monitoring activities (auditing) related findings were collected. In addition, it was proposed to add a definition of compliance monitoring from relevant regulations. Therefore, this finding summary table also clarifies the definition of compliance.

In addition to the Proposal, the recommendations were created based on stakeholder considerations.

5.2 Element 1 of Compliance Monitoring Model Proposal

The main input for the first element was from current state analysis findings, suggestions from proposal building, and IOSA standards and recommendations. Accepting ISAGO similar way as other audit pools would reduce compliance monitoring workload since it is acceptable mean by IOSA standards. A new draft of the compliance monitoring process includes a decision point where evaluation takes place if the contractor is a

member of the audit pool. In case yes, it would not need to be audited, only monitoring of audit pool reports and alerts is necessary.

Another suggestion was to create an Area Manager monitoring process, which is shown as the 'Contract monitoring' subprocess. Defining this subprocess is not in the scope of this thesis, this will be evaluated further in section 6, Validation of the proposal.

Also, there was a finding that responsibilities and interfaces for contract monitoring are not well defined. This process chart indicates different stakeholders and their functions.

There is a cost involved in joining into ISAGO airline membership, however, it would create savings due to the reduced need for auditing. Also, there is an existing process for managing De-icing and fuelling operators, so the same process can be used.

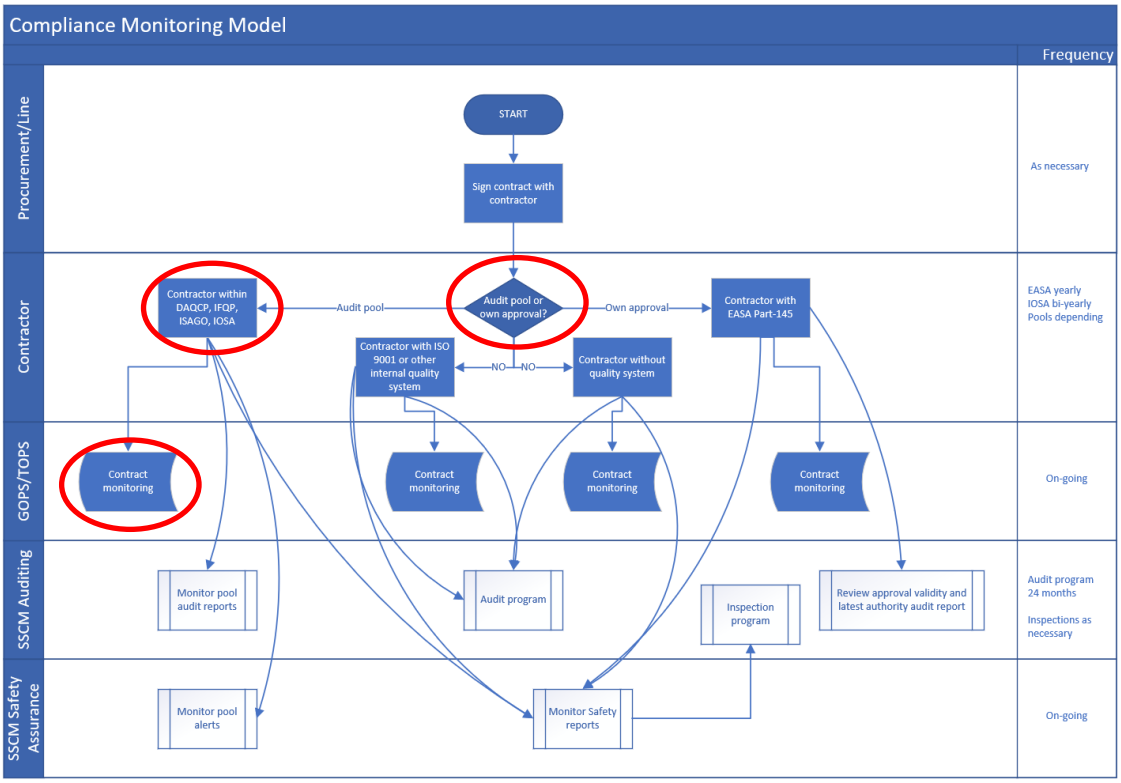

Figure 11. Improved Compliance monitoring process.

5.3 Element 2 of Compliance Monitoring Model Proposal

The main inputs for the second element are from current state analysis findings and conceptual framework. It was found out that ownership of safety and compliance-related matters was not always clear, and that interfaces were not well documented. As inspired by IT project management best practices, the responsibility assignment matrix is proposed to be used. Figure 12 below shows an example for displaying certain IOSA standards and which party is responsible for each activity in which phase of operations.

This is also beneficial since it helps during the authority and IATA audits to easily indicate interfaces and responsibilities in the contract and compliance monitoring. It is proposed to create its own RACI table for EASA regulations and IOSA standards, also including a description of monitoring elements and frequency.

		R=Responsible	A=Accountable	C=Consulted	I=Informed		
		Supplier selection and contract			Operate		
	IOSA Reference	Procurement	GOPS Network	GOPS NP	GOPS Network	SSCM Compliance Monitoring	SSCM Safety Assurance
ORG 3.4.1	The Operator shall have a quality assurance program that provides for the auditing of the management system of operations, and maintenance functions, to ensure the organization is:						
	(i) Complying with applicable regulations and standards;	I	I	I	I	A	I
	(ii) Satisfying stated operational needs;	C	R	A	R	I	I
	(iii) Identifying areas requiring improvement;	I	R	A	R	C	I
	(iv) Identifying hazards to operations;	I	R	R	C	C	A
	(v) Assessing the effectiveness of safety risk controls.	N/A	N/A	I	R	C	A
ORG 3.5.1	The Operator shall have processes to ensure a contract or agreement is executed with external service providers that conduct outsourced operational functions for the Operator. Such contract or agreement shall identify the application of measurable specifications that can be monitored by the Operator to ensure requirements that affect the safety and/or security of operations are being fulfilled by the service provider.	R	R	A	N/A	I	I
ORG 3.5.2	The Operator shall have processes to monitor external service providers that conduct outsourced operational functions for the Operator to ensure requirements that affect the safety and/or security of operations are being fulfilled.Note: IOSA or ISAGO registration is acceptable as part of the Operator's monitoring process when such registration is included in or combined with a risk assessment of the provider.						
	auditing				I	A	C
	systematic review and risk assessment of reported hazards and/or occurrences,	N/A	N/A	N/A	I	C	A
	monitoring of performance output (KPIs),	N/A	N/A	N/A	R/A	I	I
	reporting and governance processes;	N/A	N/A	N/A	R/A	I	I
	monitoring and analysis of targeted risk areas,	N/A	N/A	N/A	I	I	R
	establishment of an effective two-way communication link with the service provider.	N/A	N/A	N/A	R/A	I	I

Figure 12. Sample RACI table.

This RACI table should be part of authority approved Safety and Compliance Management Manual.

5.4 Element 3 of Compliance Monitoring Model Proposal

The main input for the third element of the proposal is based on the current state analysis findings and best practices. The key finding for this proposal is that the complexity of the

contracted services is not defined, and the monitoring elements are not well described. Also, the seasonal variation in the monitoring workload is considered. Also, from the proposal building phase, there was a suggestion to use safety culture survey/compliance evaluations as a monitoring element in the compliance monitoring model

As shown in Figure 13, contracted services are divided into four different categories. Since the risk-based auditing model considered parameters as complexity, criticality, and exposure, these elements are reused here. Using of audit pools is considered with increased monitoring control.

An action priority matrix is used to visualize different categories and their urgency for auditing.

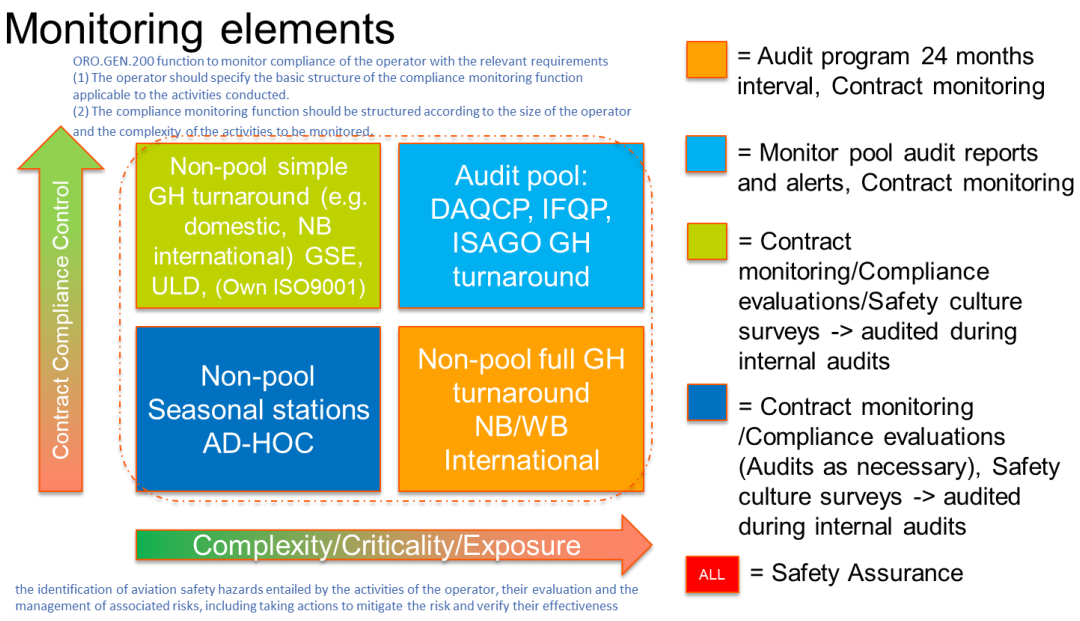

Figure 13. Monitoring elements with complexity/criticality/exposure and control.

There are two dimensions on this action priority matrix. The horizontal axis represents a combination of complexity, criticality, and exposure. For example, a ground service provider performing widebody aircraft international ground handling and cargo would fall into the right side of the axis. Also, if the destination has several flights in a day, exposure to risk increases.

The vertical axis represents control of compliance. Those service providers, who have an internal or internationally recognized quality system, have a higher ranking thus

Finnair has better control of compliance. Those service providers without any quality system, fall into this category with less control, meaning that then other means of verification need to be used to find out the compliance status of the service provider.

The first element is traditional auditing, indicated as amber color. Change to the previous risk-based auditing is that the audit interval is fixed 24 months. Contractors without ISAGO membership and performing critical/complex tasks with high operating volumes fall into this category.

The second element is pool auditing, indicated as light blue color. Following IOSA standards and recommendations, ISAGO registration is sufficient for monitoring outsourced quality together with risk assessment. In this element, access to the ISAGO database is purchased and audit reports can be reviewed from there without auditing contractors by in-house auditors.

The third element indicated by the light green color is contractors with limited criticality/complexity which could be monitored by Ground Operations by using compliance evaluations or safety culture surveys. Also, in this category would be product-related contractors, e.g. delivering Ground Service Equipment or Unit Load Devices. Instead of auditing contractors directly, the focus would be on internal audits to check how effective the Ground Operations monitoring process is. It would be possible to fall into this category if the contractor has an internal accredited quality system e.g. ISO9001.

The fourth element indicated with dark blue color is destinations with limited exposure e.g. seasonal destinations. If there is only a handful of flights, usually an audit is performed at the end of the season. Then the contractor starts to fix audit findings after the flights to the destination are already stopped. Similarly, as in the third element, these could be monitored by Ground Operations by using compliance evaluations or safety culture surveys. Instead of auditing contractors directly, the focus would be on internal audits to check how effective the Ground Operations monitoring process is. This would reduce seasonal variation in the audit-finding management workload. However, Ground Operations would be responsible for monitoring activities and similarly, as in the third element, these would be focus areas in internal auditing. Auditing could be used in cases where it is essential to get a better understanding of the compliance status of a contractor, e.g. in some exotic AD-HOC flight cases.

All elements are subject to safety assurance process, which means receiving and monitoring safety reports which are reported by ground handling provider itself, other ground handling provider who notices possible error from the previous station or by pilots. This safety data is used for risk assessment and classification for incidents. In case of alerting trends in safety performance indicators, additional actions e.g. inspections or theme analysis are done.

5.5 Initial Proposal

The initial proposal is visualized in Figure 10 below. It displays a conceptual framework, a summary of key focus areas, and proposed elements. Each element is referred to a key focus area with corresponding color e.g. blue refers to the business challenge, red referring to the weaknesses, and green to the strengths.

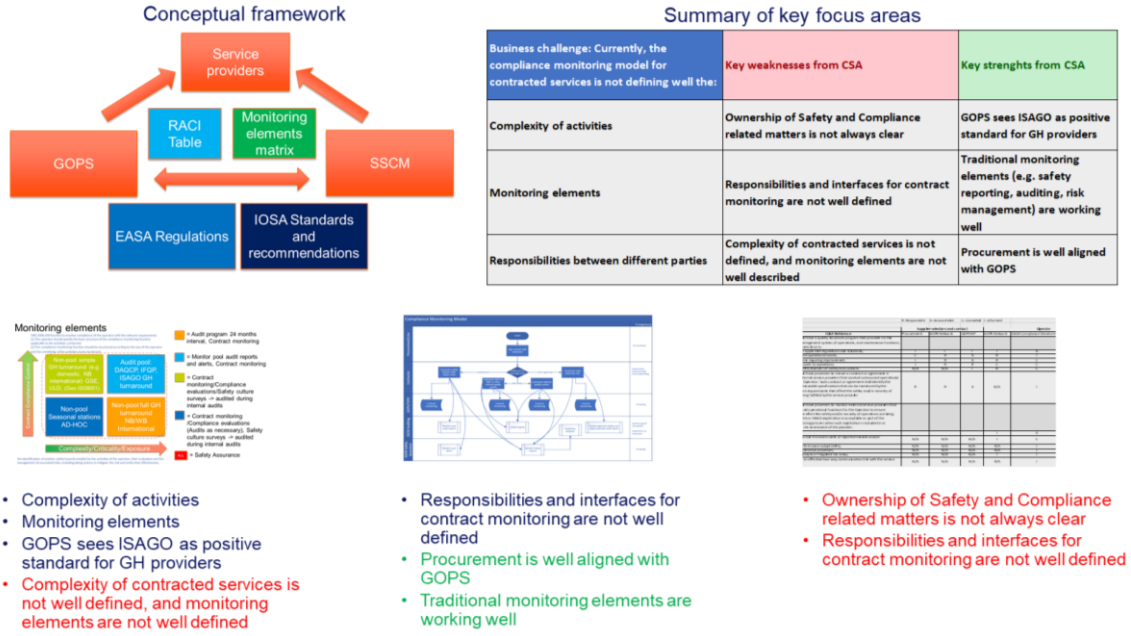

Figure 14. Visualization of initial proposal.

As discussed with the stakeholders during the proposal building phase, some suggestions are already considered in the ongoing development projects but need to be further discussed during the validation stage.

Suggestions for the proposal and their status based on the above proposal are listed below in Table 5. Some items require further evaluation during the validation phase.

Table 5. Summary of stakeholder suggestions for the proposal.

ID	Suggestions from stakeholders for the Proposal, summary (from Data 2)	Status
1	Consider accepting ISAGO similar way as DAQCP/IFQP	Included in the proposal. Needs company-level decision.
2	Create a simple risk assessment checklist for the procurement contract signing stage	Part of ISAGO provider acceptance, to be discussed with GOPS and Procurement
3	Create area manager monitoring process	Part of ongoing GOPS development projects, this is an enabler for using other monitoring elements.
4	Use safety culture survey/compliance evaluations as monitoring element in compliance monitoring model	Part of ongoing GOPS development projects, this is an enabler for using other monitoring elements.
5	Consider using Q-pulse for supplier-related information	To be discussed and decided.
6	Create a RACI table for monitoring elements	Included in the proposal.
7	Stop using risk-based auditing model, default audit interval 24 months for contractors	Included in the proposal. Needs to be decided and communicated with Civil Aviation Authority.
8	Use Safety Reporting data as an input to inspections	Included in the proposal.

6 Validation of the Proposal

This section reports on the results of the validation stage and points to further developments to the initial Proposal. At the end of this section, the Final proposal and action plan are presented.

6.1 Overview of the Validation Stage

The goal of this section is to validate the proposal developed in Section 5. The validation method used was a revision of the solution against feedback given by the stakeholders, since they were involved actively from the beginning.

The validation phase was conducted by Teams meeting with relevant key stakeholders and the evaluation of the initial proposal was performed. Data 3 was collected by Teams meeting recording and field notes.

First, the initial proposal was presented to the stakeholders. Second, findings and suggestions from the proposal building phase were grouped into visualization displayed in Figure 15. Third, for stakeholder evaluation and consideration, some expected benefits from each proposal were presented for validation.

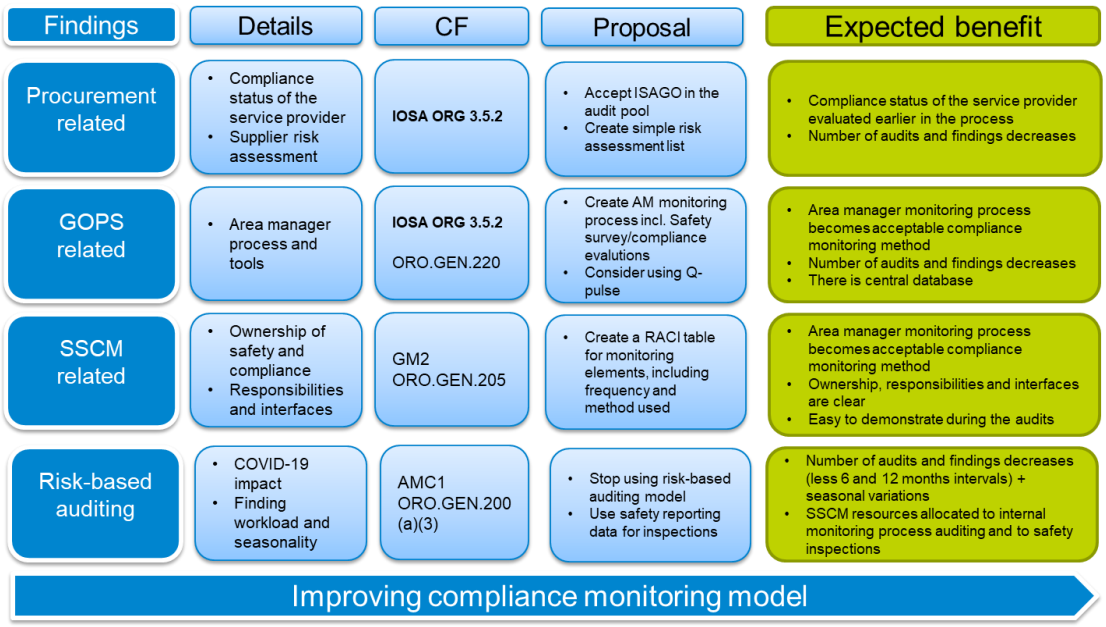

Figure 15. Visualization of initial proposal linked to expected benefits.

Expected benefits were evaluated in advance for validation purposes by using Data 2 and estimates from the current state analysis phase. Some assumptions from internal Q-pulse data (Figure 6 and 7) were used for estimating that number of audits and findings would decrease, and that seasonal variation would reduce significantly.

6.2 Developments to the Proposal (based on Data Collection 3)

The initial proposal was discussed in detail with stakeholders. It was emphasized that every proposal has also an impact on company resources. Each proposal was evaluated during the discussion and effort to reach the goal of the proposal was estimated. Expected benefits should bring value to the company despite the resources allocated to the proposals.

Based on discussion with stakeholders and field notes recorded, Figure 16 below was compiled which visualizes the proposals, expected benefit of each proposal, effort to make it happen, and stakeholders required.

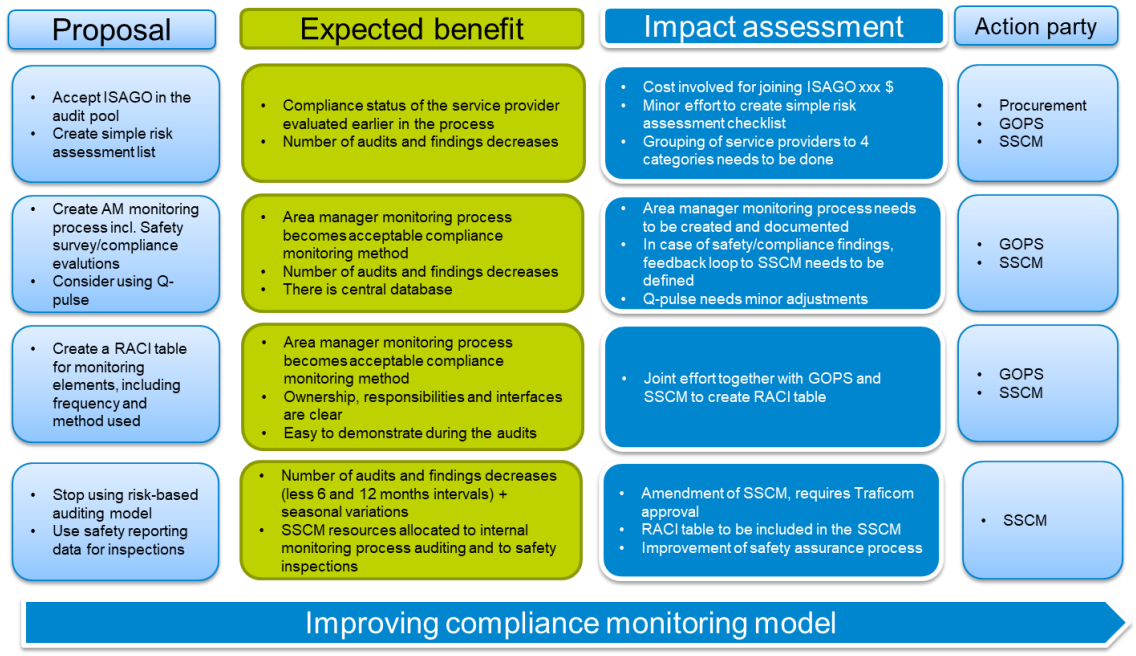

Figure 16. Visualization of the proposal with impact assessment by action party.

Each proposal was discussed with the stakeholders, and feedback collected is listed below in Table 6. As described earlier in Chapter 5, some of the proposals are already identified as an improvement item for Ground Operations, and therefore those are

already progressing. The proposed model consists of different elements, and some elements of it can be implemented with a different schedule, and still, it is possible to gain benefits from those. However, to achieve full benefits from the proposed model, then all proposals should be implemented.

Table 6. Summary of stakeholder feedback collected during the validation phase.

ID	Suggestions for Proposal	Stakeholder iteration and feedback
1	Consider accepting ISAGO similar way as DAQCP/IFQP	a) If we accept DAQCP/IFQP in the audit pool, why we wouldn't accept ISAGO in the same way. (Interviewee 2)
		b) The current organizational environment and maturity of ISAGO support this suggestion. There is good potential for using the ISAGO. ISAGO program has changed to more professional due to changes in the method used. (Interviewee 1)
		c) We have positive thoughts regarding the ISAGO program, we just need to find out which stations are using it and evaluate how big the benefit is. (Interviewee 8)
		d) ISAGO would ease checking safety and compliance elements from service providers. (Interviewee 9)
2	Create a simple risk assessment checklist for the procurement contract signing stage	No feedback was received. Considered as accepted.
3	Create area manager monitoring process	a) Area Manager evaluation process is one of the top 6 roadmap items for this year. (Interviewee 9)

		b) Safety culture surveys/Compliance evaluations will be part of this process. (Interviewee 9)
		c) If we would use other monitoring elements than auditing for seasonal destinations, we would be more in real-time monitoring mode rather than reactive. (Interviewee 1)
		d) Some big vendors are audited by headquarters; this could be used also. (Interviewee 1)
4	Use safety culture survey/compliance evaluations as monitoring element in compliance monitoring model	a) We are planning to use compliance evaluations and those are part of our area manager monitoring process. Compliance evaluations will be targeted customer process or aircraft turnaround verifications in case some data indicated that a certain station is not performing well. (Interviewee 9)
		b) Definition of compliance was useful and since the terms used are sometimes confusing. (Interviewee 9)
		c) Feedback loop to SSCM is part of ongoing process development. (Interviewee 9)
		d) We have two big players which consist of 20 stations. Instead of auditing each station, why wouldn't we just audit the headquarters of these big players? (Interviewee 2)
		e) Safety culture surveys will be launched before the ramp-up realizes. (Interviewee 2)

5	Consider using Q-pulse for supplier-related information	a) Our current tools in the procurement, does not support well the categorization of service providers for four categories (Interviewee 7)
6	Create a RACI table for monitoring elements	a) RACI table looks clear, very good presentation. (Interviewee 9)
		b) Upside of RACI table is that we are forced to evaluate our own doing in detail. (Interviewee 2)
7	Stop using risk-based auditing model, default audit interval 24 months for contractors	a) Regulation has changed over the years. During the EU-OPS, an audit was mentioned as primary monitoring. After changing to EASA-OPS, auditing is only mentioned in guidance material and compliance monitoring is a term used. (Interviewee 8) b) Regulation does not define audit intervals. After the model has been clarified, a discussion with Traficom can be started. (Interviewee 5)
8	Use Safety Reporting data as an input to inspections	a) This requires further evaluation based on risk areas e.g. fuelling, boarding, loading, and weight and balance-related processes. This should also include data from continuous monitoring. (Interviewee 5)

Since these suggestions were used for building the initial proposal, they will be visualized more in detail in the following sections.

6.2.1 Developments to Element 1 of the Initial Proposal

As summarized above in Table 6, based on stakeholders' feedback, they see that initial proposal process improvement is useful and brings benefits to the company. Figure 17 below visualizes proposals, their input to the process chart, and benefits received.

Stakeholders agreed with the initial proposal and there were no changes to the process chart.

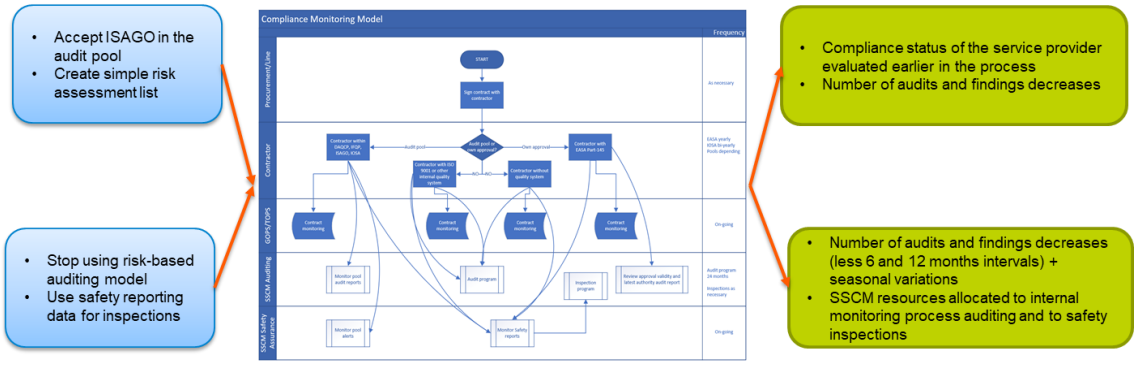

Figure 17. Element 1 of the proposal.

6.2.2 Developments to Elements 2 of the Initial Proposal

As summarized above in Table 6, based on stakeholders' feedback they see that the initial proposal responsibility assignment matrix is useful and needs to be implemented. Figure 18 below visualizes the proposal, input to RACI table and benefits received. Stakeholders agreed with the initial proposal and there were no changes to the proposed RACI table.

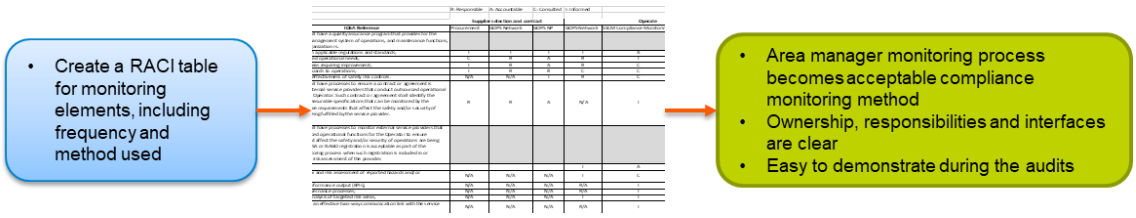

Figure 18. Element 2 of the Proposal.

6.2.3 Developments to Elements 3 of the Initial Proposal

As summarized above in Table 6, based on stakeholders' feedback they see that the initial proposal action priority matrix is useful and needs to be implemented. Figure 19 below visualizes proposals, input to action priority matrix and benefits received. Stakeholders agreed with the initial proposal and there were no changes to the proposed action priority matrix.

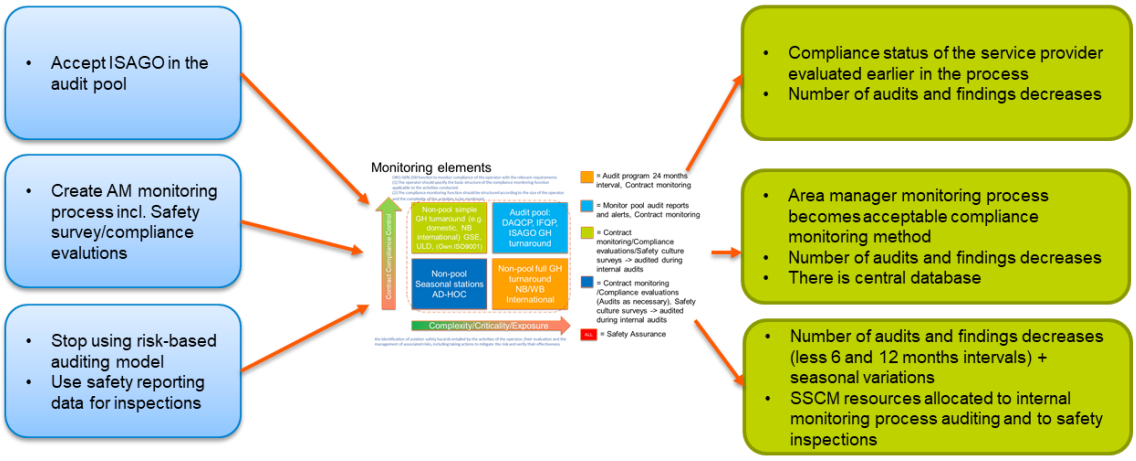

Figure 19. Element 3 of the proposal.

6.3 Final Proposal

As described in previous chapters, the initial proposal elements did not have any changes requested by the stakeholders. Subsequently, the final proposal did not have any changes as compared to the initial proposal. Figure 20 below visualizes the final proposal.

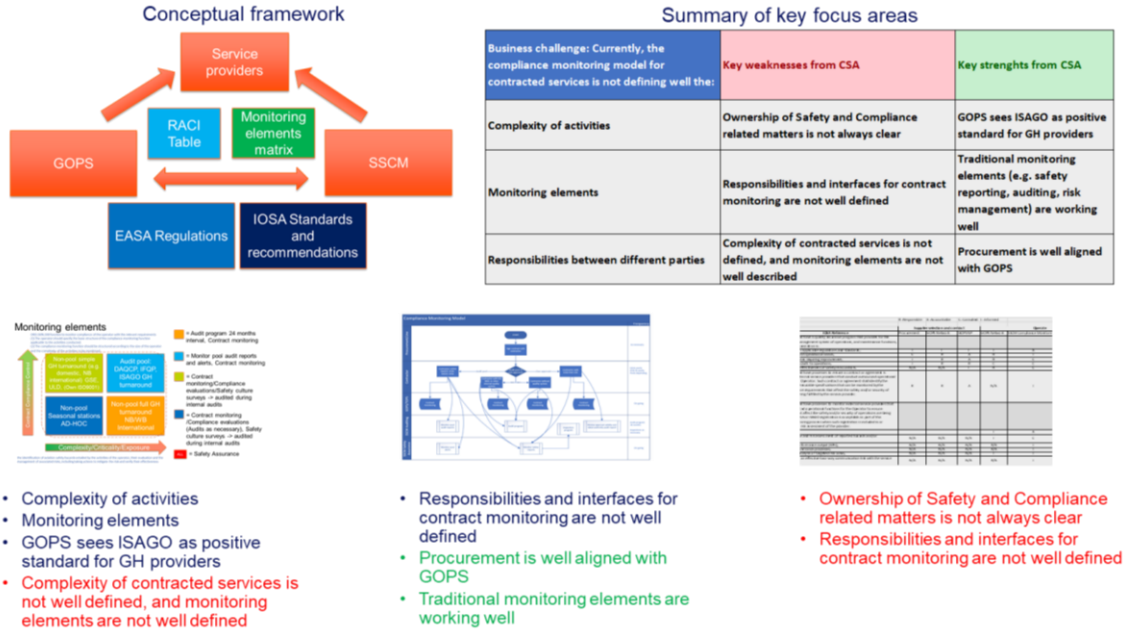

Figure 20. Final proposal.

Due to stakeholder's active involvement from the beginning of this research, they have been able to contribute and share their thoughts about best practices and potential ideas for further development. Development items have been progressing in their streams; however, this research was able to bridge the gap between stakeholders and bring clarity to the big picture at the operations level.

> *This work gathers together the scattered thoughts we have had along the way. We have a good opportunity now to implement this, of course depending on our current workload and constraints. (Interviewee 2)*

6.4 Recommendations /Action Plan

As emphasized by the stakeholders, they see the value of this final proposal and want to make it a reality.

> *This work is very practical and easy to bring into concrete action. This proposal serves as a concrete business development initiative. (Interviewee 2*)

> *This thesis outcome should not stay in the books but needs to be implemented in the real life. (Interviewee 1)*

> *We should critically evaluate why we have done things in the way we did in the past. We have now the right stakeholders in each key position supporting this change. (Interviewee 2)*

Following actions and timeline was discussed with the stakeholders; 1) evaluate how many ISAGO providers Finnair currently uses, what is the overall benefit, 2) organize a meeting with IATA counterparts to find out the status of the ISAGO program maturity, 3) area manager monitoring process development ongoing and is targeted to be ready by end of 2021, 4) safety culture surveys will be launched for all ground service providers before the ramp-up realizes, and 5) RACI table creation to start as soon as practicable.

Finnair will have IATA Operational Safety Audit during November 2021. During this IOSA audit, all the safety and compliance relevant policies, processes, and procedures are evaluated. Evaluation is focused on the documentation and implementation of these.

Therefore, it is not recommended to update procedures related to this thesis before that IOSA audit, since there is no sufficient time to gather evidence from implementation.

Some of the actions are progressing despite the upcoming IOSA audit, and the overall timeline for full implementation is planned to be on the 1st of January 2022.

7 Conclusion

This section presents the summary and the conclusion of the thesis. This section consists of four different sections. These sections include an executive summary, managerial implications, and an evaluation of the results. This chapter ends with some final words.

7.1 Executive Summary

The objective of this thesis was to improve the compliance monitoring model for the contracted services. This is important for the case company since the existing model uses on-site auditing as a primary method for verifying the compliance of the service providers. An audit is just a snapshot that is performed every 6 to 24 months timeframe and may not give a full picture of the overall compliance level from each service provider. There are other elements in the existing compliance monitoring model, which are not fully utilized, nor the process is not documented. During the writing of this thesis, global pandemic COVID-19 caused the lockdown of several countries, travel restrictions were introduced thus stopped free traveling to many countries completely meaning that on-site audits were impossible to perform. Besides, the existing model does not utilize other monitoring elements fully as enabled by EASA regulations and IOSA Standards and recommended practices.

The study first investigated the current state of the compliance monitoring model and responsibilities and interfaces regarding it. Based on findings from the current state analysis, the key focus areas were selected for the development which was; 1) ownership of safety and compliance-related matters are not always clear 2) responsibilities and interfaces for contract monitoring are not well defined, and 3) the complexity of contracted services is not defined, and monitoring elements are not well described.

Data was collected through interviews with stakeholders, reviewing the company documentation, and investigating the statistics from the company safety and compliance database. The current state analysis was presented in detail in Section 3.

After studying the current state and identifying the key focus areas, the study then gathered knowledge from relevant best practices, aviation regulations, and standards to produce a proposal. The feedback collected from the stakeholders was taken into consideration during proposal building and validation. The focus of the proposal was to clarify monitoring elements used for different levels of complexities, responsibilities, and interfaces between stakeholders. A conceptual framework was built around these elements and relevant best practices and standards were evaluated.

The initial proposal consisted of elements such as a process map, action priority matrix, and responsibility assignment matrix. Feedback from the stakeholders was collected during the initial proposal building and was considered. Proposal building started with identifying strengths and weaknesses from the existing monitoring model process. Findings were collected and prioritized and their relevance for the business challenge was evaluated. Recommendations were created for stakeholder considerations. First of all, the proposed model complies with relevant regulations and standards, second, the proposed model considers “the size of the operator and the complexity of activities” (EASA 2021) conducted as required by regulation and third, due to COVID-19 impact on traffic volumes and traveling to on-site risk-based auditing model is not used anymore.

The proposed model was validated with the stakeholders by collecting feedback which resulted that no changes were made to the initial proposal. If the final proposal will be fully implemented, expected benefits are that there is more focus on continuous monitoring of the service providers, the number of audit and findings resulting from audits will decrease, seasonal variation workload will reduce and subsequently vacates resources for other tasks such as continuous monitoring of service providers and safety assurance inspections.

7.2 Managerial Implications

To put this proposal into practice, the action plan introduced in chapter 6.4 shall be followed. Due to Ground Operations' ongoing development initiatives, such as the Area Manager monitoring process, there is good progress towards the expected schedule. All the stakeholders involved in the proposal building, are seeing the value of this proposed model so there is an expectation of managerial support when needed.

It is good to keep in mind, that currently, traffic volumes are very limited due to travel restrictions and the monitoring workload of service providers does not seem high at this moment. However, when traffic restrictions are lifted, there is an expectation of high demand for traveling, meaning that new destinations and service providers will be activated in a short timeframe. Now is a good opportunity to improve the compliance monitoring model which is scalable for higher traffic volumes.

7.3 Thesis Evaluation and Research Quality Criteria for This Thesis

This thesis aimed to create a compliance monitoring program model for the contracted services. When comparing of thesis objective against the proposal created, it can be claimed that the expected outcome was achieved. The proposal considers the complexity of activities, describes monitoring elements and responsibilities between different parties.

One challenge for this thesis was the impact of COVID-19 on the case company resulting to subject change during the data collection phase. However, most of the collected data was relevant for updated scope and objective, so some minor adjustments needed to be done. Data collection can be stated as an area that could have been done differently. Due to the above-mentioned challenge and several changes in the company, some data was only found out during the later stages of proposal building.

The reliability and validity plan described in Section 2.4 was followed to ensure the quality of the research. The validity of this thesis was verified by using the data with direct relevance to the research problem. Relevant stakeholders who are working in the problem area were interviewed for the data collected during the research, interviews were conducted against relevant questions and field notes were recorded.

The reliability of this thesis was verified by the usage of information and data sources which are mandatory to comply within the aviation industry. It was also executed by applying best practices from other industries which are proven to be functional. The topics studied are recognized in the IT and project management business and are widely used. Subsequently, it can be stated that the outcome of this thesis consists of the existing best practices instead of interviewed people's opinions or biases. The reliability of the proposal can be considered then good.

7.4 Closing Words

Writing this thesis has been a significant opportunity to learn and has grown me as a professional. Applying different best practices and improving the existing processes have always been interesting for me, and now I was able to do it with a structured and well-guided thesis project in my company environment. This experience has given me the capabilities and potential to use these transferable skills in any other improvement projects in my upcoming professional life.

I believe that outcome of this thesis can be beneficial for other companies in the aviation industry, or any other highly regulated industry that must comply with stringent standards.

The next steps in this area would be to study how to utilize data better, which is generated from different systems e.g. aircraft, ground handling related software's and how to feed this data for decision-making. This data input could be then used as a parameter for monitoring elements and processing.

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List of survey/interview questions

1	What kind of contractor monitoring methods your organization are using?
2	How does your organization record results of contract monitoring and what kind of actions are done based on it?
3	What is the current workload for contractor monitoring in your organization?
4	Is workload for contractor monitoring distributed evenly in your organization?
5	Is there seasonal variation in contractor monitoring workload?
6	What is your opinion about the benefit of ISAGO to safety?
7	Is ISAGO a reliable source?
8	What is your opinion about the benefit of other quality standards e.g. ISO9000/14001 to safety?
9	In your opinion, what is relevant in the current model? Is there something that is not relevant?

10	Are all elements of Risk-Based Compliance and Safety Monitoring Program (Safety Culture, Safety Risk, Compliance Risk, Quality, Complexity, Exposure and overseeing manager evaluation) equal or should there be weighing?
11	In the SCM Risk-Based Compliance and Safety Monitoring Program, there is one criteria 'overseeing manager evaluation'. What data should be used to support this evaluation?
12	Currently, what is working well?
13	Currently, what is not working well?
14	What is your vision of contractor monitoring in 2024?
15	In your vision, what would be an optimum model to monitor your area of responsibility?
16	What kind of KPIs/SPI's would be needed in your vision?
17	What would be the optimum contractor monitoring method for seasonal stations? How it should be implemented?

Answers are company confidential, not included in the appendix.

List of informants

Informant	ID	Data 1		Data 2	Data 3
		Date			
Manager, Ground Operations	1	14.5.2020	19.5.2020	26.3.2021	16.4.2021
Senior Manager, Ground Operations	2	14.5.2020	19.5.2020	26.3.2021	16.4.2021
Manager, Ground Operations	3	28.5.2020	5.6.2020	N/A	N/A
Manager, Safety and Compliance Management	4	31.5.2020	N/A	N/A	N/A
Senior Manager, Safety, Security and Compliance Management	5	19.5.2020	N/A	26.3.2021	26.4.2021
Manager, Aircraft Maintenance	6	26.5.2020	N/A	N/A	N/A
Senior Manager, Procurement	7	28.1.2021	N/A	N/A	16.4.2021

Manager, Safety, Security and Compliance Management	8	18.2.2021	N/A	26.3.2021	16.4.2021
Manager, Ground Operations	9	19.3.2021	N/A	26.3.2021	16.4.2021