The background of the slide is a photograph of an airport tarmac at sunset. A large United Airlines aircraft is the central focus, with its tail fin and the word 'UNITED' visible. The sky is filled with numerous white contrails from other aircraft, creating a complex pattern. In the foreground, a white service truck with 'Kühn CLEANING' written on its side is parked near the aircraft's stairs. The overall scene is bathed in the warm, golden light of the setting sun.

**STUDY ON AIR TRAFFIC CONTROLLER (ATCO) AND  
ENGINEERING STAFF (ATSEP) SOCIAL ISSUES AND  
WORKING CONDITIONS**  
RESULTS FROM CASE STUDIES AND WORKSHOPS | STEVEN  
DHONDT, ESTHER OPRINS AND ROLF ZON

## › INTERACTIVE MENU

# STUDY ON AIR TRAFFIC CONTROLLER (ATCO) AND ENGINEERING STAFF (ATSEP) SOCIAL ISSUES AND WORKING CONDITIONS



Our interpretation  
framework and  
methodology



Results from the  
workshops

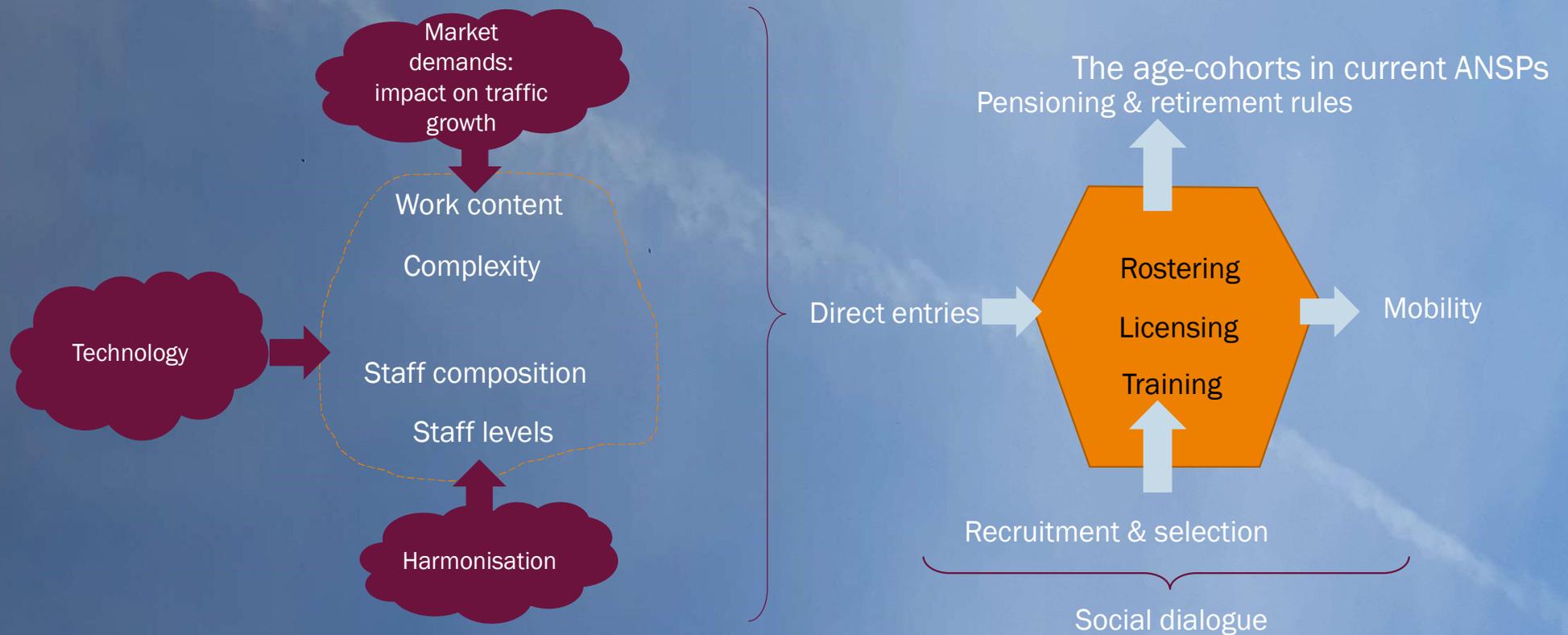


Conclusions



Next steps

# INTERPRETATION FRAMEWORK: BUILDING ON THE STUDY LOGIC ANSP-POLICIES AS THE FOCAL POINT



## › METHODOLOGY: CASE STUDIES

### DATA COLLECTION: CORONA-PROOF AND NO-DISCLOSURE

#### DSNA

- Video interviews with managers
- Video interviews with ATCOs and ATSEPs
- Video interview with a trade union member
- Participants in workshops (ATCO, ATSEP, management)

#### LFV

- Video interviews with managers
- Video interviews with ATCOs and ATSEPs
- Video interview with a trade union member
- Participants in workshops (ATCO, ATSEP, management)

#### DFS

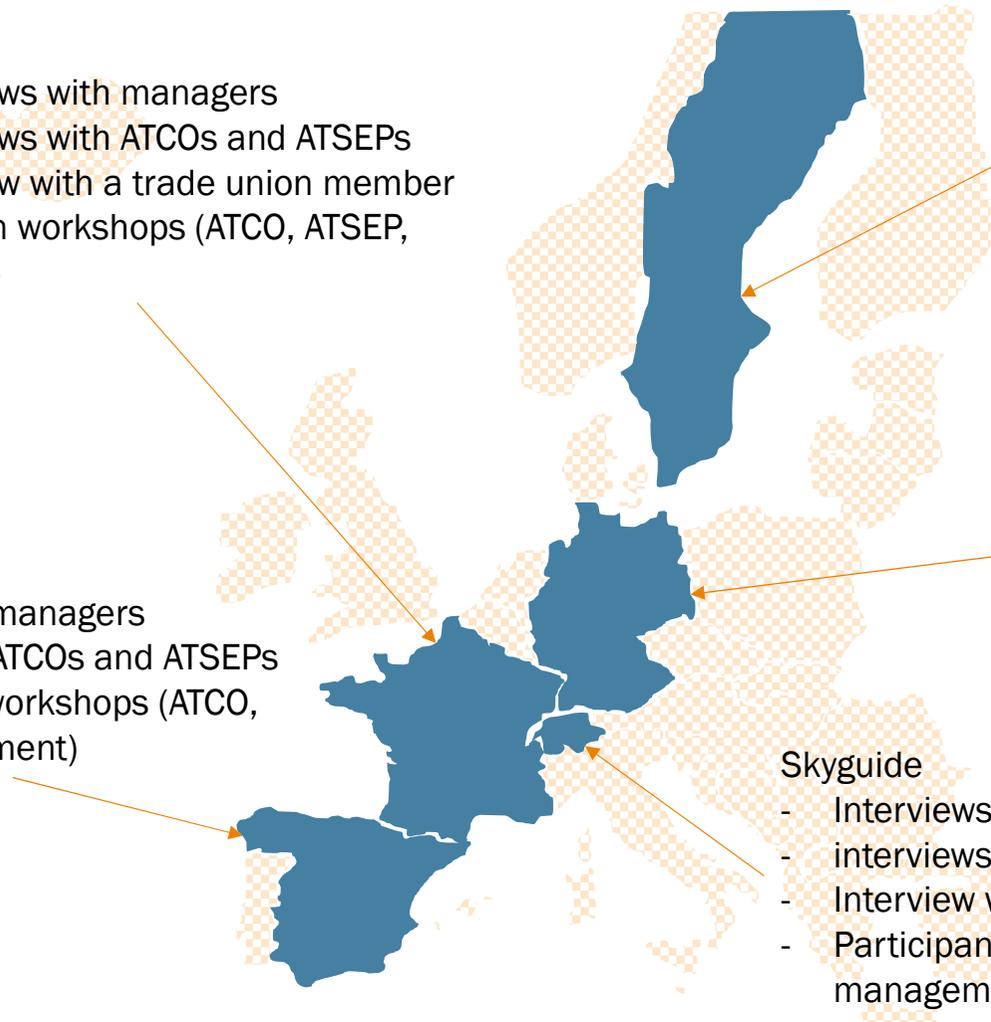
- Survey with managers, ATCOs and ATSEPs
- Participants in workshops (ATCO, ATSEP, management)

#### ENAIRE

- Interviews with managers
- Interviews with ATCOs and ATSEPs
- Participants in workshops (ATCO, ATSEP, management)

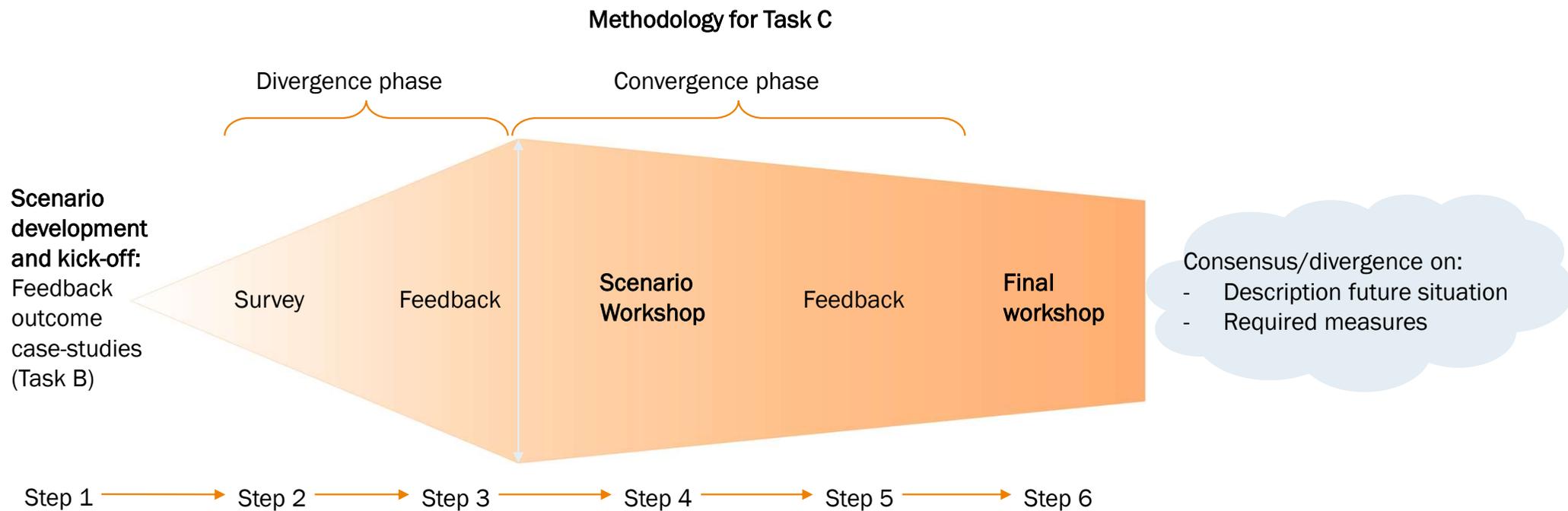
#### Skyguide

- Interviews with managers
- interviews with ATCOs and ATSEPs
- Interview with a trade union member
- Participants in workshops (ATCO, ATSEP, management, TU)



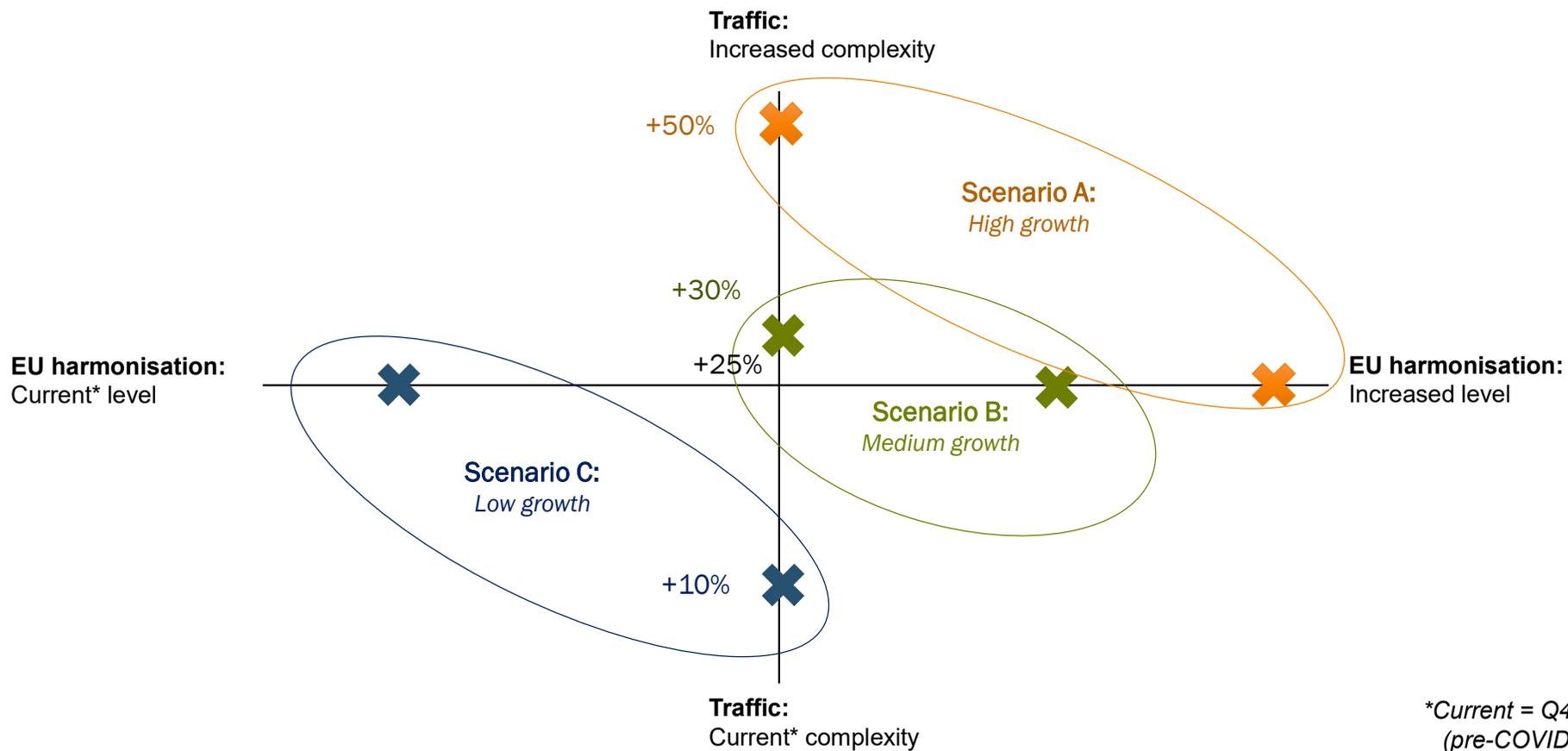
# METHODOLOGY

## THREE STEPS TO A COMMON RESULT



# SCENARIO WORKSHOPS

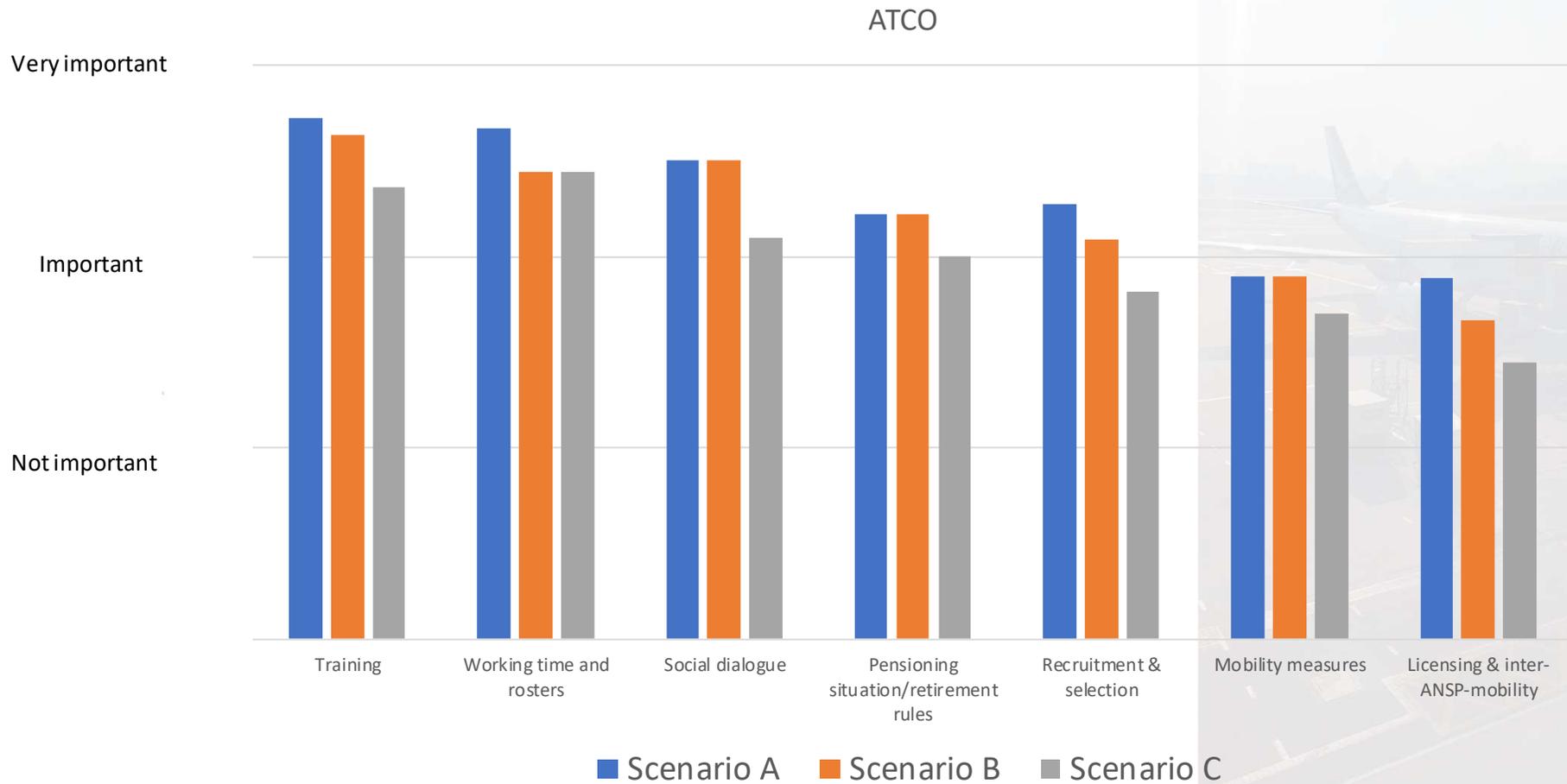
## THREE SCENARIOS AS CONTEXT



\*Current = Q4 2019  
(pre-COVID-19)

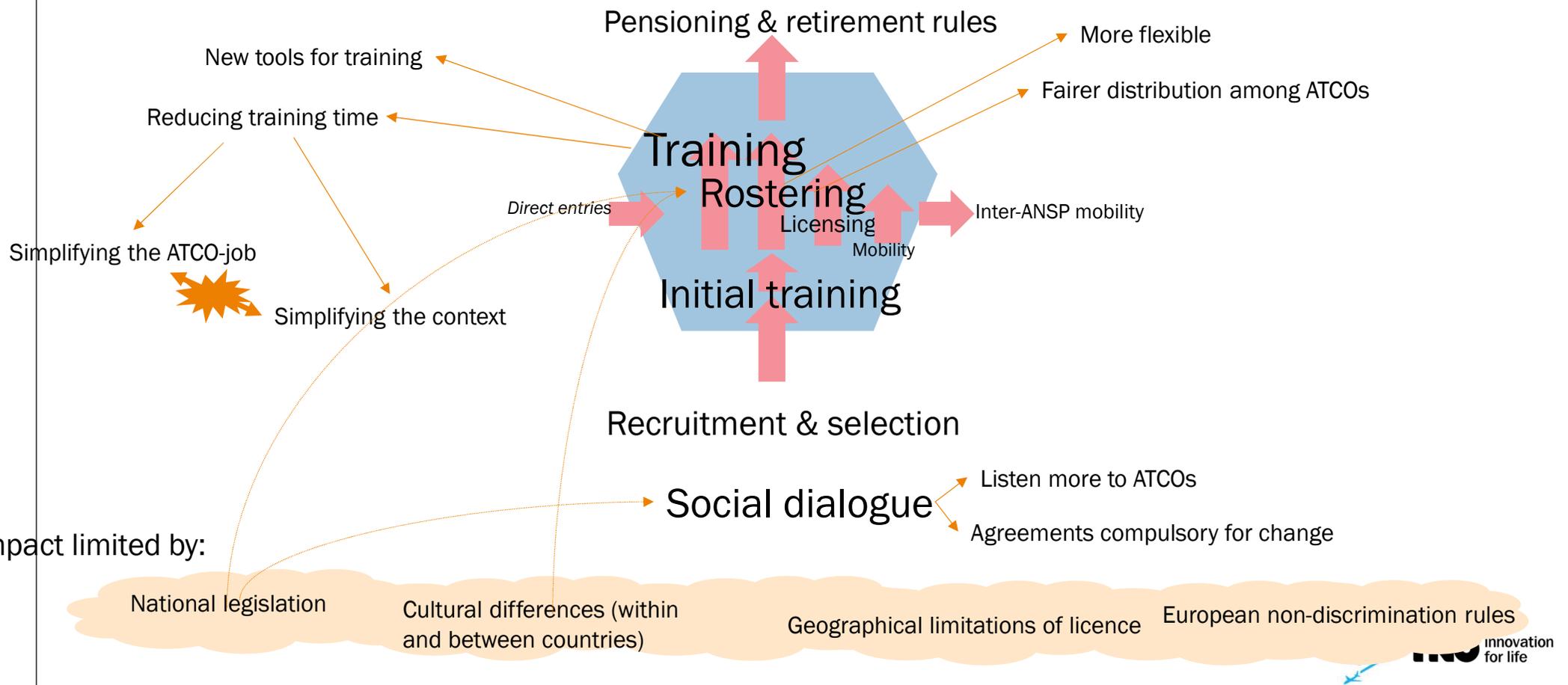
# WORKSHOP: PROPOSALS BY ATCOS

## SURVEY RESULTS



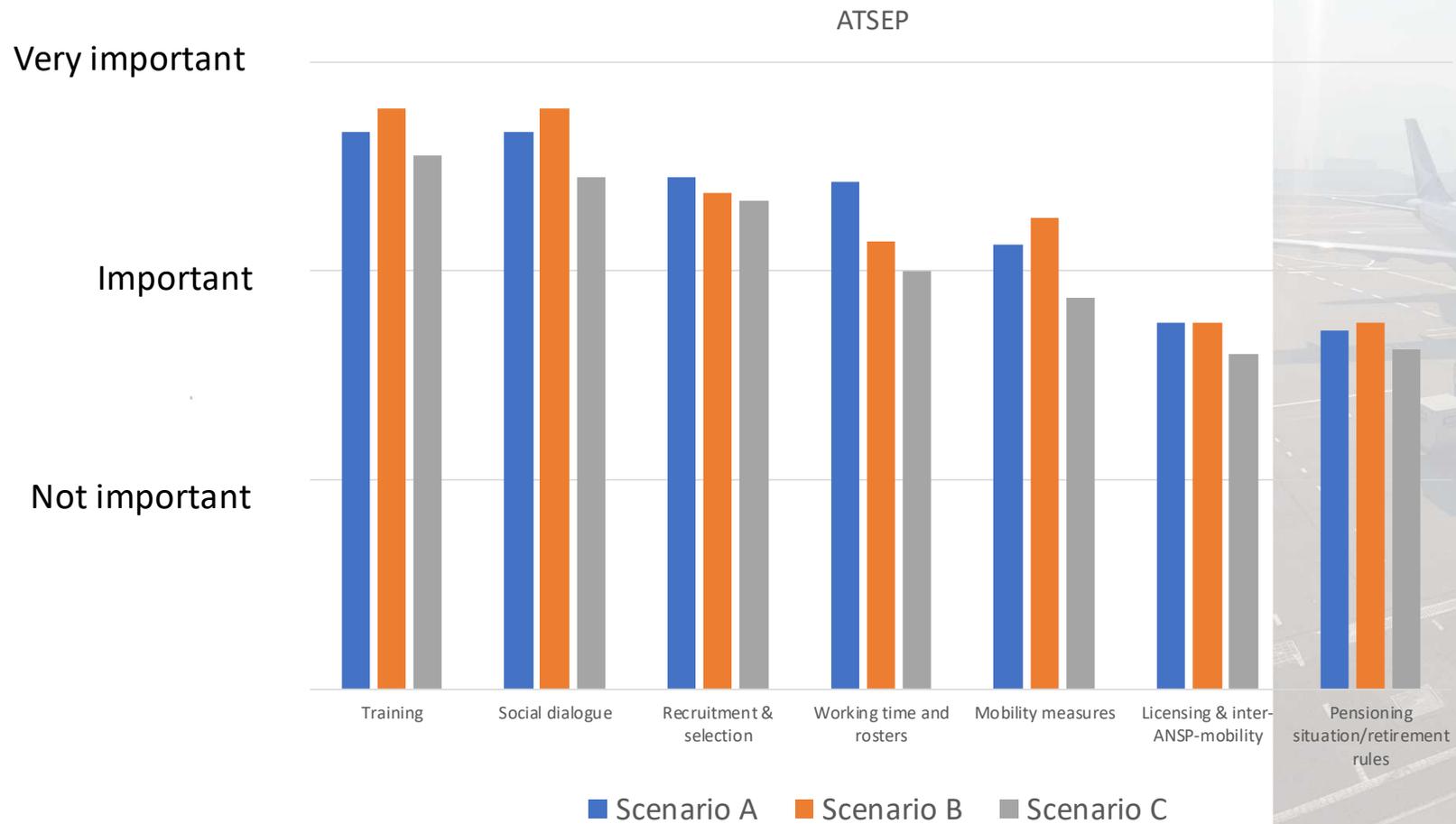
# WORKSHOPS: HUMAN AND SOCIAL CONDITION OF ATCOS

## HOW TO DEAL WITH FUTURE DEMANDS ON ATCOS



# WORKSHOP: PROPOSALS BY ATSEPS

## SURVEY RESULTS



# WORKSHOPS: HUMAN AND SOCIAL CONDITION OF ATSEP

## HOW TO DEAL WITH FUTURE DEMANDS ON ATSEP'S

More investment (tools)

More process overview in work

Rethink OJT training because elder ATSEPs cannot train younger (scenario A/B)

Pensioning & retirement rules

Training

Rostering

Direct entries

Licensing

Inter-ANSP mobility

Mobility

Initial training

Change skills requirements

Maintain high recruiting levels

Create a pool of ATSEPs

Recruitment & selection

Social dialogue

Listen more to ATSEPs

EU-level dialogue more ATSEP focused

Impact limited by:

Scenario C leads to pessimistic forecast

Too rigid regulations



## › TO CONCLUDE

### WHAT IS THE COMMON UNDERSTANDING OF THE CURRENT SITUATION?

- › There is a need to share information about the human and social dimension. Converging performance outcomes hide divergent mitigating measures. These differences also influence what is expected for future changes.
- › Despite fluctuations and an overall increase in air traffic, the staff composition of ANSPs seems to have hardly changed.
- › ANSPs showed **significant differences in mitigating measures** they selected for ATCOS and ATSEPs to channel external pressure from high traffic demands.
- › **Divergence explained by:**
  - › Different organisational models for ATCOs and ATSEPs.
  - › Within same licence rules, different practices exist.

## › TO CONCLUDE

### MITIGATING MEASURES TO IMPROVE THE OVERALL SITUATION BASED ON FUTURE SCENARIOS

- › Further performance improvement of the sector could also be achieved with more **sharing of 'best practices'**.
- › *Training, social dialogue and recruitment/selection* have been prioritised as the most critical mitigating measures
- › Need for **sufficient staff and personnel's continuous development**
- › The participants did **not make much distinction between the three different scenarios** in prioritising the various mitigating measures
- › 23 core mitigating measures

## › 23 MEASURES TO MITIGATE FUTURE DEMANDS (GREY = ATCO + ATSEP; WHITE = ATCO; YELLOW = ATSEP)

### Training

On-the-Job Training and Simulator training: **ANSPs need to make better use of simulator training.** To maintain a licence, an ATCO has to show sufficient on-the-job training hours. Currently, simulator training hours are not counted for this competency requirement. This topic would help ANSPs to have more flexibility in organising training for the ATCOs. EASA should be engaged in this discussion.

**Mitigating impact:** OJT puts a heavy burden on the organisation and ATCO. Simulator training can alleviate this. The quality of competence development should stay at the same level.

**Professionalisation of trainers and training function.** Currently, ANSPs rely on experienced ATCOs to support on-the-job training or training supervision. This task merits more professionalisation. Training professionals can help ANSPs in the development of a better training function.

**Mitigating impact:** Professional trainers have access to more effective training methods. This change reduces the need to use specialised ATCOs for a non-ATCO task and will reduce the number of recruits who drop-out.

**EU-level training infrastructure.** The training infrastructure is an essential investment for ANSPs. In the past, ANSPs have tried to save costs by scaling back this infrastructure. More support for an EU-level training infrastructure could be a solution for ANSPs. There needs to be a better understanding of the obstacles and opportunities for such an infrastructure.

**Mitigating impact:** ANSPs can reduce training costs. Competence development can be standardised.

**Self-learning training system.** New ATSEP training systems can help ATSEPs to maintain and develop their skills. Developing new competencies or even keeping up with the technological development is crucial for ATSEPs. More research is needed to understand the benefits of alternative training methods. Self-learning seems a critical venue to develop competencies. Self-learning promises more opportunities for scaling-up training opportunities. Sharing these experiences between ANSPs is in the interest of all ANSPs.

**Mitigating impact:** ANSPs can reduce training costs. ATSEPs can develop new expertise more quickly or maintain existing expertise more easily.

## Recruitment and selection

**Reducing drop-out and improving pass rates.** Current recruiting levels for new ATCOs remain low. Candidates' chances of passing the initial selection and their pass rates during the basic training are considered too low. ANSPs are developing each their methods to reduce drop-out and improve pass rates. There is a clear need to share such experiences.

**Mitigating impact:** More supply of ATCO-talent helps ANSPs to respond more quickly to changing demands.

**Sharing experience of the effectiveness of recruitment and selection strategies.** There is one platform in Europe to exchange experiences with selection of new ATCOs (FEAST). This platform could have a broader scope. Sharing experiences allows ANSPs to improve their recruiting and prevents competition on new talent.

**Mitigating impact:** More supply of ATCO-talent helps ANSPs to respond more quickly to changing demands.

Offer more opportunities to talent interested in ATM-positions. The major ANSPs have more candidates applying for training positions than they need. ATCO-positions are denied to strong candidates. **Referrals from other ANSPs could profit the receiving ANSPs.** If ANSPs could implement such an exchange, the whole sector and the candidates themselves can benefit. Here lies an opportunity for EU initiatives.

**Mitigating impact:** More supply of ATCO-talent helps ANSPs to respond more quickly to changing demands. It reduces recruiting costs for ANSPs.

**Create a European market for ATSEPs.** The technical and engineering expertise in the ATM-industry mainly stays confined to the national borders. ANSPs are experiencing a vital brain drain towards other technical and engineering companies. To maintain expertise in the ATM-industry, ANSPs need to invest more to create opportunities for ATSEPs in neighbouring countries. The sector should reduce limitations in the licence system to allow more direct entries.

**Mitigating impact:** Expertise of ATSEPs can be better maintained.

ANSPs need to **manage multi-generational ATSEP-workforce.** In the past, ANSPs had ATSEPs that mainly managed one type of technology. Nowadays, ANSPs need to make sure that they have the expertise to maintain 'older technology' and new technology at the same time. For the older technology, the labour market does not offer any technical or maintenance expertise. And ANSPs need to attract at the same time new expertise to deal with the latest digital technologies. HR-systems (personnel planning and deployment) are not always geared to the presence of different generations of knowledge in one company. New policies need to be developed.

**Mitigating impact:** Expertise of ATSEPs can be better maintained.

## Social dialogue

Change and social dialogue. The ATM industry is in continuous evolution. To support agile adaptation, **the ANSPs need to embrace social dialogue as an essential tool.** The degree to which social dialogue plays this role is underestimated.

**Mitigating impact:** More information on this measure helps to create more understanding of and support for the role of social dialogue and help the agile change of the ANSPs.

**Agile model of social dialogue.** Current Collective Labour Agreements (CLAs) regulate relations between management and employees, based on an assessment of the past. The issue is that for each new demand, CLAs are hard to change. The sector could profit from having an approach that is more flexible in dealing with contemporary issues. Such an agile model should be developed.

**Mitigating impact:** An agile social dialogue model reduces overhead to achieve changes in contracts and agreements.

**Assessing the impact of the newest technologies.** ATCOs and ATSEPs are affected by new technologies. Discussions on new technologies are not well organised, or at least the support for such investments could be more robust. It would be helpful for both groups to rely on a methodology to assess new technologies from their perspectives and know-how to discuss possible management changes with these technologies.

**Mitigating impact:** Technological change can be accelerated and working situations can improve accordingly.

Benefits of the **specialisation and integration ATCO model.** ANSPs use different models for the description of the ATCO-position. An analysis of the impact of these two models does not exist. The two models impact recruiting, training and development of talent. They also affect the operational management and future development of technologies. These challenges need to be listed.

**Mitigating impact:** Choices for one or the other model have profound consequences. An informed discussion helps to make better and more supported choices.

**ATSEP representation at the EU-level.** ATSEPs feel that the current discussion at the EU level on ATSEP does not give sufficient attention to their issues and interests. An assessment is needed to what degree these interests are covered and what could help to improve their representation.

**Mitigating impact:** Better representation allows more support and buy-in from ATSEPs for EU-level decision making.

## Working time and rosters

Information on the impacts of shift systems on the flexibility of ANSPs. There is a robust understanding of how shift systems work and what they have as an impact on the health and performance of ATCOs. Less is known on the **operational implications of alternative shift systems**.

**Mitigating impact:** More attuned choices for a shift system will also be better supported.

**Comparison of fixed versus individual shift systems.** There is a need for more understanding of the operational effects of both types of shift systems. Different approaches to shift systems promise other things for organisations and their individual staff members. This understanding could help ANSPs make their choices.

**Mitigating impact:** More attuned choices for a shift system will also be better supported.

ATSEP and **standard working weeks**. The high growth scenario would allow for the use of more reliable technology. ANSPs could reduce the intervention need from ATSEPs. This change is a future possibility. Such an opportunity should be underpinned with an impact assessment with more insight into the safe operation.

**Mitigating impact:** The reduction of the burden of the shift system has positive health impacts for ATSEPs. It makes the job more attractive to other engineering or technical personnel.

## Internal mobility

Motivating factors in ATCO work. ATCOs are more **motivated by the content of their work**, than by the prospect of making promotion. A broader assessment of the motivating factors in ATCOs work deserves more investigation. This outcome underpins different policies towards ATCOs.

**Mitigating impact:** More attuned HR-measures and -policy will be more supported by ATCOs.

## Pensioning situation and retirement rules

**Balance job security and longer careers.** ATCOs can offer support to ANSPs after their career in the working position. They need to adapt to other tasks by taking up such tasks earlier in their career. Job security can be a means for ANSPs to motivate ATCOs to start redeveloping their career path and working longer.

**Mitigating impact:** Longer careers of ATCOs help reduce costs. ATCOs who start earlier with a second career have more time to develop substantial expertise in new tasks. Such a change also allows reducing the health impacts of long ATCO careers.

**Age sensitive policies.** ATSEPs are much more confronted with the fast change in competence areas during their career. Not all ATSEP can and should redevelop their competencies. ANSPs need to develop in cooperation with ATSEPs age-sensitive policies to make the best use of the available competence, expertise and motivation.

**Mitigating impact:** ANSPs will be able to maintain competencies. ATSEPs can choose which type of competencies they want to develop or maintain.

## Licence, Inter-ANSP mobility

Overview of different application of EASA-regulations/licence. ANSPs indicate that there are **differences in the application or interpretation of the EASA-regulations**. These differences are not caused by EASA. An overview of such local means of compliance does not exist and would help to understand how the application of the regulations can be made more harmonised. EASA could provide an overview of such different applications of licence rules.

**Mitigating impact:** Harmonised application of regulations allows more mobility between ANSPs. Having harmonised regulations allow more standardisation of technology requirements.

Future technology capabilities and licence restrictions. Technology allows for new management concepts. **To implement such new concepts, any conditions that restrict the licence should be clear**. The example is sector-less (location-independent) control. The current licence requires sector-specific expertise.

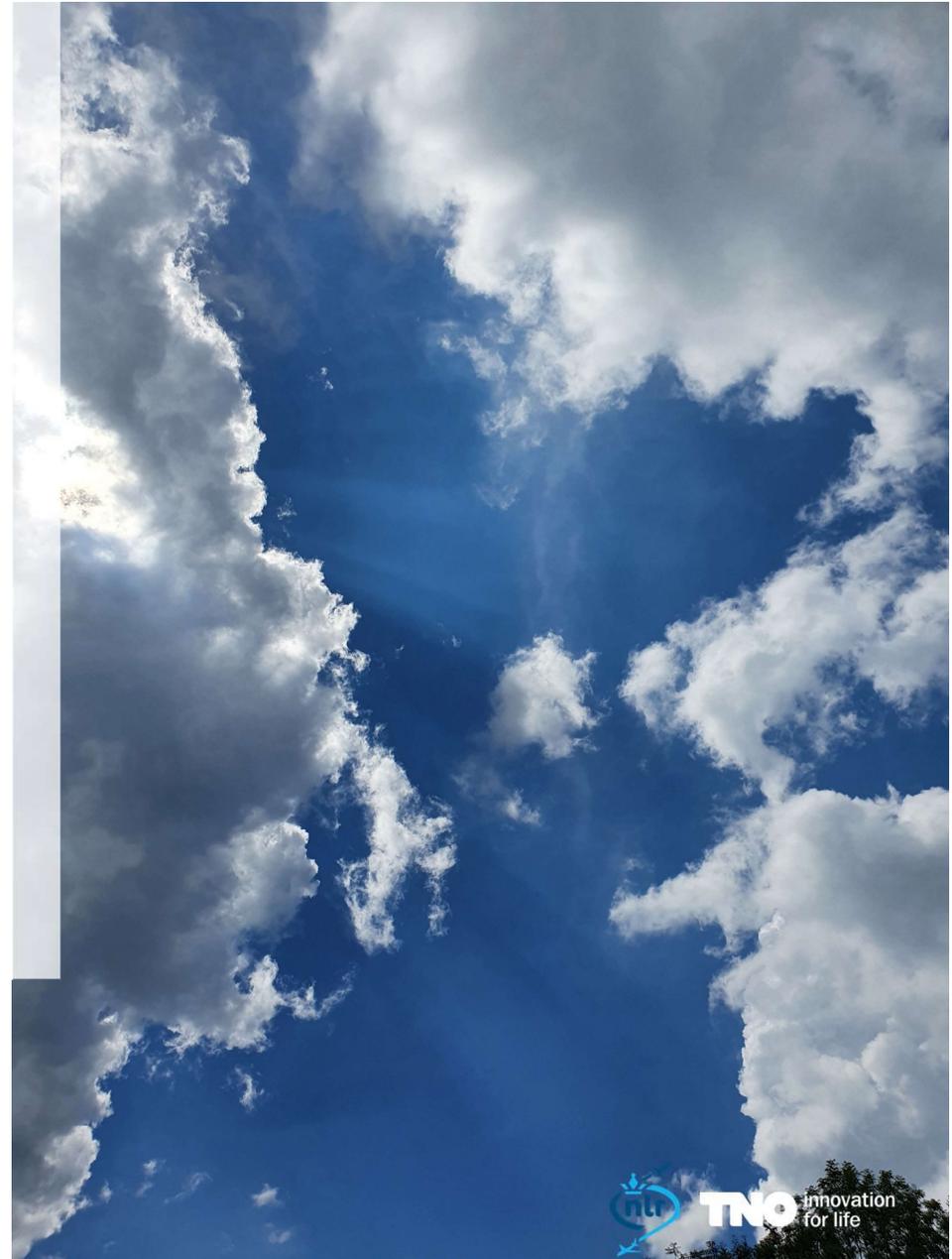
**Mitigating impact:** If ANSPs want to use technology to react flexibly to changes, then the licence should not be a barrier for change. Prospective analysis can identify possible obstacles.

Cooperation for changing regulations and licences. Changing the regulations can create a level-playing field that allows ANSPs to compete in ATSEP-tasks. Such an intention may help to lower costs, but ANSPs or ATSEPs will not support it. The **strategy should be to cooperate between ANSPs to improve the regulations and licences**.

**Mitigating impact:** The ATSEP licence needs to stay future-proof. Cooperation allows ANSPs to exchange how to improve operations. Information may not be shared if the environment is one of competition.

## › NEXT STEPS

- › Sharing information
- › Human centric requires socio-centric perspective on technology
- › Cultural differences may be overrated
- › Are interests of ATSEPs sufficiently reflected in EU-level talks?
- › Make information on human and social issues more retrievable
- › Combine methods in future research
- › Impact of organisational practices, of flexibility, circumstances





› **THANK YOU FOR  
YOUR TIME**

**TNO** innovation  
for life