EXECUTIVE SUMMARY

The results of the study on ATCO fatigue show that critical fatigue risks associated to the rosters analysed are currently low in the EU, relative to other sectors. This, together with reactive and proactive fatigue management measures, therefore suggests that the current practices of EU ATSPs are generally effective in terms of managing fatigue risks. However, the study also highlights that aviation safety could be further enhanced by collecting more data and by enhancing the level playing field across the EU on ATCO working practices.

EASA is therefore proposing 8 key measures to this effect, to be implemented by institutional and operational stakeholders as outlined in the action plan, starting as of mid-2024. As part of these measures, recommended bracket values for the 8 mandatory elements could be considered for inclusion and provided in EASA Guidance Material, if supported by the affected stakeholders.

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ABBREVIATIONS

ACC: Area Control Centre
AMC: Acceptable Means of Compliance
ANS: Air Navigation Services
ANSP: Air Navigation Service Provider
APP: Approach
ATC: Air Traffic Control
ATCEUC: Air Traffic Controllers European Unions Coordination
ATCO: Air Traffic Controller
ATM: Air Traffic Management
ATS: Air Traffic Services
ATSP: Air Traffic Service Provider
BMM: Bio Mathematical Model
CAA: Civil Aviation Authority
CANSO: Civil Air Navigation Services Organization
EASA: European Union Aviation Safety Agency
EC: European Commission
ECCAIRS: European Co-ordination Centre for Accident and Incident Reporting Systems
ECR: European Central Repository
ETF: European Transport Workers Federation
EU: European Union
FRM(S): Fatigue Risk Management (System)
GDPR: General Data Protection Regulation
GM: (EASA) Guidance Material
ICAO: International Civil Aviation Organization
IFATCA: International Federation of Air Traffic Controllers’ Associations
KPI: Key Performance Indicator
MAB: Member States Advisory Body
NAA: National Aviation Authority
NLR Royal NLR – Netherlands Aerospace Centre
NSA: National Supervisory Authority
PVT: Psychomotor Vigilance Task
SESAR: Single European Sky ATM Research
SESAR 3 JU: SESAR 3 Joint Undertaking
SMS: Safety Management System
TeB: (EASA)Technical Bodies
TRL: Technology Readiness Level
TWR: Tower
UK: United Kingdom
1. BACKGROUND – WHY AND WHAT

Existing regulatory framework

In 2008, the EU regulatory framework incorporated for the first time an essential requirement related to the prevention of fatigue of personnel providing an ATC service. It merely stated that fatigue had to be managed through a rostering system addressing duty periods, duty time and adapted rest periods.

This essential requirement was later detailed through two implementing regulations both applied as of 2017 and still in force today, Regulation 2015/340 and Regulation 2017/373, completed by Acceptable Means of Compliance and Guidance Material. The current mandatory requirements on ATCO fatigue are the following:

- Prevention of fatigue included in the training programme as part of the ATCO’s licensing scheme
- Implementation by the ATSP of an ATCO fatigue management policy
- Implementation by the ATSP of principles and procedures to enable fatigue reporting
- Implementation by the ATSP of principles and procedures to consider fatigue as contributing factor in occurrence investigation and analysis
- Implementation by the ATSP of procedures for the identification and management of the effect of fatigue on safety
- Implementation by the ATSP of an ATCO fatigue information programme
- Implementation by the ATSP of an ATCO rostering system specifying at least 8 mandatory elements/parameters:
  1. maximum consecutive working days with duty;
  2. maximum hours per duty period;
  3. maximum time providing air traffic control service without breaks;
  4. the ratio of duty periods to breaks when providing air traffic control service;
  5. minimum rest periods;
  6. maximum consecutive duty periods encroaching the night time, if applicable, depending upon the operating hours of the air traffic control unit concerned;
  7. minimum rest period after a duty period encroaching the night time;
  8. minimum number of rest periods within a roster cycle.

These regulatory requirements were adopted with a safety perspective in mind, not an efficiency or productivity one. Furthermore, none of these texts provides prescriptive values on the

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1 Annex IV, ATS.OR.300 (Scope), ATS.OR.315 (Fatigue) and ATS.OR.320 (Air traffic controllers’ rostering system(s))
2 AMC1 ATS.OR.315(a) Fatigue Management Policy and AMC1 ATS.OR.320(a)(6);(7) Air traffic controllers’ rostering system(s)
working or rest time of ATCOs\textsuperscript{3}, due to absence of consensus at the time of the drafting and adoption of the Regulations in 2015 and 2017. Other parameters were also discussed but not retained.

**Why a study by EASA?**

The Airspace Architecture Study of the SESAR JU and the Wise Persons Group recommended in 2019 to prepare the European ATM/ANS for its future challenges, notably an improved scalability and resilience, in particular through digitalisation/automation and operational harmonisation. The Covid crisis and the war in Ukraine have further reinforced the need for scalability, resilience and adaptability, including of the human dimension of the EU ATM/ANS system. As reflected in the EASA EPAS document, the achievement of these objectives involves at some point to reconsider the way ATCOs’ work is organised, including the rostering systems which are largely based on fatigue/fitness considerations. This coincides with the need to evaluate, after 5 years of implementation the effectiveness, efficiency and added value of the 2017 regulations, in line with the EU Better Regulation approach. Finally, the shortage of ATCOs expected in the EU in the coming years, calls for an assessment of the efficiency of current working practices.

In addition to other initiatives related to the regulatory framework for ATCOs, notably in training, EASA launched in December 2022 a scientific study to take stock of the current situation in the EU on the impact, prevention and management of ATCO’s fatigue with a view to take possible future action. The study objectives were established as follows:

1. Evaluate how the current EU regulations on ATCO fatigue have been implemented since 2017
2. Collect scientific data on the prevalence, causes and effects of ATCO fatigue
3. Explore the link between technology and ATCO fatigue

The study ended in February 2024\textsuperscript{4} and achieved the assigned objectives as outlined in the final report, published on the EASA website\textsuperscript{5}.

**Comparison with the EU regulatory framework on flight time limitations for pilots (FTL)**

A parallel is often established with the EU regulations on FTL. While the purpose is the same – ensure that task achievement/decision making does not deteriorate to the extent that flight safety is endangered because of the effects of fatigue – the level of knowledge and maturity is not the same, at least in the EU. EU Regulations contain FTL requirements at least since 1991, with prescriptive maximum values added to some of the

\textsuperscript{3} The Guidance Material itself refers also to guidance material of other organisations (ICAO, CANSO, Eurocontrol etc.)


\textsuperscript{5} Air Traffic Controller (ATCO) fatigue | EASA (europa.eu)
parameters of the rostering systems for pilots at least since 2000. Since then, the regulations have been improved in a continuous iterative process through several amendments, based on several successive scientific studies commissioned by EASA, as well as by other European stakeholders. On the contrary, the EU regulatory provisions on ATCO fatigue are rather recent (2017) and lack evaluation and feed-back. Furthermore, the corpus of scientific knowledge on ATCO fatigue in Europe is very limited. There is very little literature on this topic in the world and hardly any objective data at European level. The study commissioned by EASA in 2022 is therefore the first of its kind and should be considered as a starting point. Nevertheless, lessons can be learned from the experience on FTL regulations and part of the study on ATCO fatigue applied the same scientific approach as in the last EASA study on FTL.

2. DESCRIPTION OF THE ISSUE

Main study results

Thanks to the participation of large and representative samples of ATSPs and ATCOs, the study produced the following main outcomes:

First study question: evaluation of the implementation of the 2017 regulations

The study concludes that generally, by 2023, the regulatory requirements have all been implemented in the 46 EU ATSPs, with a low social and economic impact. A slight improvement in the working conditions of ATCOs has been observed between 2017 and 2023, notably for ATCOs working at ACCs. A small difference in the working conditions is observed between ATCOs working at ACCs and ATCOs working at aerodromes. There were no accident or serious safety incident linked to ATCO fatigue reported in the period 2013-2023 (July). The EU regulatory intervention is therefore deemed to have been effective, efficient and to have added value by contributing to a better level playing field.

However, a detailed qualitative assessment of the implementation measures reveals a number of areas for improvement:

- Lack of reference data on the topic in the EU to compare and assess evolution
- Very large variations in the way the mandatory requirements are implemented, not all fully justified by local conditions, so the level playing field is not fully achieved
- The effectiveness of the regulations in terms of safety could not be confirmed due to insufficient compliance with reporting obligations
- The terms of the regulations are sometimes understood differently across the EU
- Although implemented, some of the requirements remain inefficient

Second study question: data collection on the prevalence, causes and effects of ATCO fatigue

Prevalence

Based on the data collected with 36 ATSPs and on the roster analysis, the study provides the observed average values applied by the ATSPs for the 8 mandatory elements, as well as the standard deviations:
## Average values and standard deviation for roster elements (2023)

<table>
<thead>
<tr>
<th>(1) maximum consecutive working days with duty (days)</th>
<th>Area Control Centre (ACC) Average</th>
<th>Area Control Centre (ACC) Standard deviation</th>
<th>Aerodrome (TWR) Average</th>
<th>Aerodrome (TWR) Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.9</td>
<td>1.4</td>
<td>5.8</td>
<td>1.7</td>
</tr>
<tr>
<td>(2) maximum hours per duty period (hours)</td>
<td>9.2</td>
<td>3.0</td>
<td>10.5</td>
<td>2.7</td>
</tr>
<tr>
<td>(3) maximum time providing air traffic control service without breaks (minutes)</td>
<td>90</td>
<td>38</td>
<td>154</td>
<td>89</td>
</tr>
<tr>
<td>(4) ratio of duty periods to breaks when providing air traffic control service</td>
<td>0.69</td>
<td>0.10</td>
<td>0.72</td>
<td>0.10</td>
</tr>
<tr>
<td>(5) minimum duration of rest periods (hours)</td>
<td>11.6</td>
<td>5.3</td>
<td>12.0</td>
<td>5.1</td>
</tr>
<tr>
<td>(6) maximum consecutive duty periods encroaching the night-time (days)</td>
<td>2.3</td>
<td>1.0</td>
<td>2.9</td>
<td>1.2</td>
</tr>
<tr>
<td>(7) minimum rest period after a duty period encroaching the night-time (hours)</td>
<td>22.5</td>
<td>19.5</td>
<td>17.8</td>
<td>15.5</td>
</tr>
<tr>
<td>(8) minimum number of rest periods within a roster cycle</td>
<td>3.7</td>
<td>2.0</td>
<td>3.7</td>
<td>4.5</td>
</tr>
</tbody>
</table>

The consortium in charge of the study recommends that ATSPs use these values for each of the 8 elements to establish the rosters in a safe manner. Indeed, we know from the study measurements, that these values are associated with a low risk of critical fatigue (5.6%) relative to other relevant industry sectors. Should the specific local conditions so require, the ATSPs could possibly go beyond these values, subject to fatigue management measures. To this effect, the study has also calculated the fatigue risk index associated to the main fatigue factors, three of which are part of the 8 roster elements. This allows the ATSP and the authorities to calculate the additional risk created by values higher than the average. See following example:

**Example - Maximum consecutive working days with duty (days)**

The data collected in the study indicates that the EU ATSPs apply on average a maximum of 5,9 consecutive days for ATCOs employed at ACCs. This average corresponds to a level of 5.6% of critical fatigue risk. For every additional consecutive day added to this average, the critical fatigue risk increases by 27%. Thus, 7 days would represent 7% of critical fatigue risk (i.e., 27% of 5.6% in addition to the baseline 5.6% of critical fatigue risk), and 8 consecutive days would represent 9% of critical fatigue risk. 10 consecutive working days make the critical fatigue risk step up to 15%.

The study could not determine however what would be the absolute safety limit, due to the lack of existing data in the EU to substantiate proposals. As an element of comparison, the critical fatigue risk with pilots in a previous similar study (FTL) applying the same methodology was found to be between 10 and 15%.

Upon request, EASA explored the possibility to provide more precise guidance by using the brackets values within the standard deviations. However this statistical method, showed inherent limitations due to the fact that the variations across ATSPs are very wide, leading to an uneven distribution of the values above and below the average, i.e. not following a Gaussian distribution. It is therefore not recommended to use reference bracket values based on the standard deviations in this particular case.
The following table provides a view of the application of standard deviations (for ATCOs in ACCs only), demonstrating the limitations of this approach:

<table>
<thead>
<tr>
<th>Mandatory roster element For ACCs</th>
<th>Average value observed</th>
<th>Standard deviation (SD)</th>
<th>Lowest bracket value (with SD)</th>
<th>Highest bracket value (with SD)</th>
<th>Percentage of the rosters observed</th>
<th>Fatigue risk index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum consecutive working days with duty (days)</td>
<td>5.9</td>
<td>1.4</td>
<td>4.5</td>
<td>7.3</td>
<td>67%</td>
<td>+27% of critical fatigue risk per additional day</td>
</tr>
<tr>
<td>Maximum hours per duty period (hours)</td>
<td>9.2</td>
<td>3</td>
<td>6.2</td>
<td>12.2</td>
<td>78%</td>
<td>7</td>
</tr>
<tr>
<td>Maximum time providing air traffic control service without breaks (minutes)</td>
<td>90</td>
<td>38</td>
<td>52</td>
<td>142</td>
<td>100%</td>
<td>+33% of critical fatigue risk per additional hour in one work session</td>
</tr>
<tr>
<td>Ratio of duty periods to breaks when providing air traffic control service</td>
<td>0.69</td>
<td>0.10</td>
<td>0.59</td>
<td>0.79</td>
<td>81.25%</td>
<td>Below average:56% Above average:44%</td>
</tr>
<tr>
<td>Minimum rest periods after duty (hours)</td>
<td>11.6</td>
<td>5.3</td>
<td>6.3</td>
<td>16.9</td>
<td>100%</td>
<td>-</td>
</tr>
<tr>
<td>Maximum duty periods encroaching night time (between 00.000 and 5:59)</td>
<td>2.3</td>
<td>1.0</td>
<td>1.3</td>
<td>3.3</td>
<td>100%</td>
<td>Below average:66.7% Above average:33.3%</td>
</tr>
<tr>
<td>Minimum rest period after a duty encroaching the night-time (hours)</td>
<td>22.5</td>
<td>19.5</td>
<td>3</td>
<td>42</td>
<td>93%</td>
<td>43% of critical fatigue risk per additional day of rest</td>
</tr>
<tr>
<td>Minimum number of rest periods within a roster cycle</td>
<td>3.7</td>
<td>2</td>
<td>1.7</td>
<td>5.7</td>
<td>100%</td>
<td>Below average:33.3% Above average:66.7%</td>
</tr>
</tbody>
</table>

Indeed, the study further demonstrated that the level of fatigue corresponding to the rosters analysed and therefore to the above values is low compared to other sectors, with only 5.6% of the duties involving a critical fatigue risk.

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6 No reply was given beyond 12; 12,2 is a theoretical number that should be discarded, because the risk was not assessed beyond 12h.
7 Between 6 and 12 hours
8 Approximate percentage because the average falls in the middle of a range category in the questionnaire
9 No reply was given below 8h. Since the fatigue risk was not assessed below that number, the limit should be set at 8h.
10 The standard deviation is only a theoretical number and 3h rest is not realistic. Based on the FAA study, 10h rest minimum would be recommended
The conclusion is that the prevalence of ATCO fatigue in the EU is overall low to moderate and that EU ATSPs can safely use for these 8 elements, the average values observed. They have the flexibility to go beyond the average values, subject to assessing the safety risk and adopting corresponding fatigue management measures. Recommended bracket values could possibly be explored in the context of future guidance material.

**Causes**

The study identifies the main sources of fatigue and provides a ‘fatigue risk index’ attached to each of these main factors:

- Night duties (increase the risk of fatigue by 253%)
- Difficult weather conditions (increase the risk of fatigue by 192%)
- Monotonous traffic situations (increase the risk of fatigue by 120%)
- Sleep debt (increase the risk of fatigue by 80% for each 10% of sleep debt)
- Maximum time providing services without breaks (each hour increases the risk by 33%)\(^\text{11}\)
- Maximum consecutive days with duties (each additional day increases the risk by 27%)\(^\text{12}\)
- Minimum number of rest periods within a roster (each additional rest period reduces the risk by 43%)\(^\text{13}\)

The last three factors in this list are part of the 8 mandatory roster elements. The study could not establish the fatigue risks linked to the 5 other mandatory roster elements, probably because they are already well implemented and protecting ATCOs.

The conclusion is that some of the main causes of fatigue are currently not addressed in the regulations. Some of the factors which are already addressed in the regulations (notably the 3 mandatory roster elements, at the end of the list above above) still generate fatigue risks and the way they are addressed in the regulatory framework may be insufficient.

**Effects and mitigation**

The study does not provide ideal values to be implemented by ATSPs, due to the fact that the individual local conditions and relevant applicable national laws were not assessed. However, it suggests using the average values observed as benchmark and provides guidance on how to calculate the additional risks stemming from a deviation from the average values.

It recommends that additional risks are mitigated in a proportionate and commensurate manner, through the implementation of progressive/incremental Fatigue Risk Management measures, as part of a comprehensive Fatigue Risk Management System (FRMS). This FRMS should include a set of predictive, pro-active and reactive measures, though this could be challenged by stakeholders as overregulation in view of the observed low fatigue risk.

**Third study question: link between technology and fatigue**

The study identifies opportunities as well risks linked to the introduction of technologies supporting ATCOs in their tasks. It concludes that the technology impact of fatigue can only be assessed when

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\(^{11}\) This parameter is one of the 8 mandatory roster elements

\(^{12}\) Idem

\(^{13}\) Idem
deployed in a particular operational environment, taking into account the specificities of this environment. However, fatigue could at least be partly included in human performance assessments at the various stages of the technology life-cycle (design, production, ATM/ANS change, etc.).

**Key issues identified**

The situation in the EU regarding ATCO fatigue and working conditions can be considered as being acceptable, with a low fatigue and safety risk. However, some issues remain which could impact the efficiency and harmonisation of the EU ATM system:

- Insufficient scientific/objective data on ATCO fatigue in the EU to compare and assess evolution, although the current study is providing solid evidence
- Large variations in the way the 8 mandatory roster elements are implemented, linked to the absence of reference values in the regulations
- A limited number of ATSPs implement rosters with extreme values which trigger critical fatigue risks
- Other elements, roster-related or non-roster related, may contribute to fatigue risks but are not reflected in the regulations (e.g. type of shift, number of hours per week, non-operational duties, swaps after roster publication etc.); no average values were collected for these other elements;
- Insufficient or ineffective reporting, coupled with the difficulty of ensuring a non-punitive environment
- Different interpretations of some terms/notions
- Possible need to clarify some common definition
- Ineffective information programmes on ATCO fatigue
- Difficult oversight by national and EU authorities on the implementation of ATCO fatigue requirements

If these issues are not considered, there is a risk that the actual situation on ATCO fatigue remains insufficiently known. There is also a risk that some fatigue hotspots remain in the EU ATSPs leading to potential safety hazards. It also triggers the risk of discrimination between ATCOs in the EU and/or of shortages of ATCOs in some parts of the EU.

Given the integrated nature of the EU ATM system under the EASA and the Single European Sky, these issues should therefore be addressed at EU level in a holistic and systematic way.

**3. WHO IS AFFECTED BY THE ISSUE?**

**Air traffic services providers** providing services in the airspace of the EASA Member States must comply with the regulatory requirements and manage their ATCO fatigue. They want to be able to optimise the use of their workforce and keep flexibility in the organisation of the working time.

**Air traffic controllers** employed in these ATSPs must be protected from abusive working practices and fatigue. Some of them call for prescriptive maximum values in the regulation, while others are satisfied with the flexibility to express their preferences during the establishment of the rosters.
Other ATSP staff, notably the management and staff in charge of training and rostering, need to be well informed of the risks of fatigue, on how to recognise the signs of fatigue and on how to prevent and manage them at organisational level.

The NSAs/NAAs in charge of the oversight of the ATSPs need to have reference data/values to be able to efficiently exercise their oversight on this topic.

The European Commission promoting the general interest of the EU by proposing and enforcing legislation as well as by implementing policies and the EU budget.

EASA establishing and maintaining a high uniform level of civil aviation safety in the Union, whilst aiming to contribute to wider Union aviation policies (e.g. overall performance of the civil aviation sector, level playing field) as listed in article 1.2 of the Basic Regulation.

4. WHAT WE WANT TO ACHIEVE

Article 1 and 2 of the EASA Basic Regulation entrust the Agency with the competence to ensure safety and establish a level-playing field in the domains covered by the Regulation. The Agency is also requested to support and contribute to other domains of civil aviation, such as efficiency.

In line with Art. 50.1(d) of the EASA Basic Regulation, the objective of the Agency is to ensure a high level of safety by protecting air traffic controllers against the effects of tiredness while, at the same time, allowing for sufficient flexibility in scheduling for the ATSPs.

While a EU framework is already in place and has provided added value, additional measures can be considered to further enhance this framework and address the issues identified under §2. Such enhancement could be achieved through two main lines of action:

- Enhance safety by improving collective know-how, through the collection and sharing of more information on ATSPs/ATCO working practices
- Ensure a better level-playing field across the EU on working practices, with the object of suppressing risky situations.

5. POSSIBLE MEASURES

Recognising the need for action to better meet the below objectives, the Agency recommends the following actions to address the challenges identified by the study and to complement the relevant activities already in place

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14 This refers notably to Agency standardisation and National Competent Authorities oversight activities. The actors can take measures to enhance oversight, monitor practices and stay on top of developments in this particular field, e.g. notification of changes to the functional system.
A – Enhance safety by enhancing collective know-how on ATCO Fatigue

The following measures will be implemented:

A1 - Reporting and monitoring
   - A.1.1 - Safety promotion/Information campaign to ATCOs, ATSPs and NSAs including guidance on ‘just culture’, with a view to enhancing reporting on ATCO fatigue
   - A.1.2 - Enhance the taxonomy and fields in the reporting tools, including the ECR
   - A.1.3 - Re-evaluate the occurrences linked to ATCO fatigue in 2028 and consider if further studies on ATCO fatigue are required. These may, for example, consider the correlation of working hours/fatigue levels/traffic volume or complexity, or consider the relevance and appropriateness of national labour laws.

A2 - Sharing of data on ATCO working practices
   - A.2.1 - Use of Data4Safety by ATSPs for a voluntary and anonymised reporting on rostering scheme values
   - A.2.2 – Use of existing relevant fora by ATSPs to share best practices
   - A.2.3 – Consider the creation of an expert group integrating all categories of stakeholders from States and interested parties, in particular ATCOs, by EASA on ATCO fatigue; the group should ideally include human factors experts to support and guide on these aspects;

B- Ensure a better level playing field in the EU

The following measures to reduce variations and address critical fatigue hotspots will be implemented:

B1 – Review existing guidance material and complement them with:
   - Reference values based on recommended bracket values for the 8 roster elements in addition to the fatigue risk index
   - Further information on the current definitions
   - A range of fatigue management measures, corresponding to the various risks levels

B2 – Subject to a regulatory impact assessment to be carried out at appropriate moment and in the light of the work on guidance material under B1, provide more detailed regulatory requirements on an implementation framework for ATSPs.
6. HOW WE WANT TO ACHIEVE IT

EASA initial proposal consists in the combination of the following 8 measures, which are considered as able to bring a rapid, effective and proportionate response to the issues identified\(^{15}\) by 2028:

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Measure</th>
<th>WHO</th>
<th>WHEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.1.1</td>
<td>Safety promotion/Information campaign to ATCOs, ATSPs and NSAs including guidance on ‘just culture’, with a view to enhancing reporting on ATCO fatigue</td>
<td>EASA</td>
<td>End 2024</td>
</tr>
<tr>
<td>A.1.2</td>
<td>Enhance the taxonomy and fields in the reporting tools, including the ECR</td>
<td>EASA/NSAs</td>
<td>End 2024</td>
</tr>
<tr>
<td>A.1.3</td>
<td>Re-evaluate the occurrences linked to ATCO fatigue in 2028 and consider if further studies on ATCO fatigue are required. These may, for example, consider the correlation of working hours/fatigue levels/traffic volume or complexity, or consider the relevance and appropriateness of national labour laws.</td>
<td>EASA</td>
<td>2028</td>
</tr>
<tr>
<td>A.2.1</td>
<td>Use of Data4Safety by ATSPs for a voluntary and anonymised reporting on rostering scheme values</td>
<td>ATSPs</td>
<td>2026</td>
</tr>
<tr>
<td>A.2.2</td>
<td>Use of existing relevant forums by ATSPs to share best practices</td>
<td>ATSPs</td>
<td>As of 2024</td>
</tr>
<tr>
<td>A.2.3</td>
<td>Consider the creation of an expert group by EASA on ATCO fatigue, including all categories of stakeholders from States and interested parties, as well as ATCOs and human factors experts</td>
<td>EASA</td>
<td>As of 2025</td>
</tr>
<tr>
<td>B1</td>
<td>Review and complement guidance material on:</td>
<td>EASA</td>
<td>By mid-2026</td>
</tr>
<tr>
<td></td>
<td>o Reference values based on recommended bracket values for the 8 roster elements in addition to the fatigue risk index</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Further information on current definitions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o A range of fatigue management measures, corresponding to the various risks levels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>Subject to a regulatory impact assessment to be carried out at appropriate moment and in the light of the work on guidance material under B1, provide more detailed information</td>
<td>EASA</td>
<td>As of 2026</td>
</tr>
</tbody>
</table>

\(^{15}\) This assessment does not constitute any obligation for EASA to amend any regulation. Any decision to undertake regulatory actions will be determined in accordance with Agency’s overall strategy related to aviation safety and environmental protection as defined in the European Plan for Aviation Safety (EPAS) and the Single Programming Document (SPD)
**7. TIMELINE**

Stakeholders were consulted, as indicated below, in the period May – June 2024 on the basis of an earlier version of this document. Following their positive feedback, and with their comments integrated into this updated version, EASA will launch the related actions as of June 2024, including the creation of a rule-making task in the EPAS 2025-2026, if needed.

Consultation conducted on the draft Action Plan:

<table>
<thead>
<tr>
<th>ACTION</th>
<th>STAKEHOLDERS CONCERNED</th>
<th>TIMELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consult ATCO SG</td>
<td>6 ATSPS (AirNav, MUAC, ISAVIA, DSNA, Skyguide, ANS CZ), Chair EASA Management Board, Commission, IFATCA ATCEUC, EASA ED</td>
<td>16 May 2024</td>
</tr>
<tr>
<td>Consultation/focus group with ATCO representatives through ASPReT</td>
<td>ATCEUC + ETF + CANSO</td>
<td>22 May</td>
</tr>
<tr>
<td>Consultation/focus group with Ad hoc EASA TeB</td>
<td>Technical representatives from EASA CAAs/NAAs</td>
<td>28 May</td>
</tr>
<tr>
<td>EASA Management Board</td>
<td>EASA MS + observers</td>
<td>6 June 2024</td>
</tr>
</tbody>
</table>