

The MESAFE project

MEntal health for aviation SAFETY

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MESAFE: an EASA initiative

- The MESAFE research project was **launched by EASA in May 2022**
- Lasting 2 years, MESAFE addressed **new medical developments** for the **early diagnosis** as well as **treatment of mental health conditions** which could pose a **safety risk for aviation** and would consequently lead to pilot and ATCO **unfitness** or the **limitation** of their medical certificate for safety purposes.
- Currently, **there are no specific, validated mental health assessment methods for aviation use**, incorporating the specific operational needs, to address the issues identified.

MESAFE is prioritising the topic of **mental health in aviation medicine** and the topic of **wellbeing** in front-line aviation operations.



Why MESAFE?

- Mental disorders may lead to deliberate harmful actions, which may be conducted to 'maximise damage'. The second pilot can be physically prevented from taking over.
- Mental disorders are highly prevalent and largely undertreated: in 2019, nearly one billion people worldwide had a mental health disorder; In the first year of the COVID pandemic, depression and anxiety increased by more than 25% (WHO, 2022).



The Germanwings accident: a dramatic wake-up call for the European aviation industry



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Oct 24 (Reuters) - An off-duty pilot charged with trying to disable the engines of an Alaska Airlines jet in flight told police afterward he was suffering a nervous breakdown, had taken psychedelic mushrooms two days earlier and had not slept in 40 hours, court documents showed on Tuesday.



#MESAFE #Aviation #MentalHealth #HorizonEU

WE ARE MESAFE

MEntal health for aviation SAFETY

Our mission is to help Aeromedical Examiners and peer support groups detect signs and symptoms of psychological discomfort before they generate mental health issues and **associated safety risks**, and provide early support.

Committing to mental health is an investment towards a better safety for all.



This project is funded from the European Union's Horizon Europe research and innovation programme under contract number EASA.2022.C07



www.easa.europa.eu/en/research-projects/mesafe-mental-health

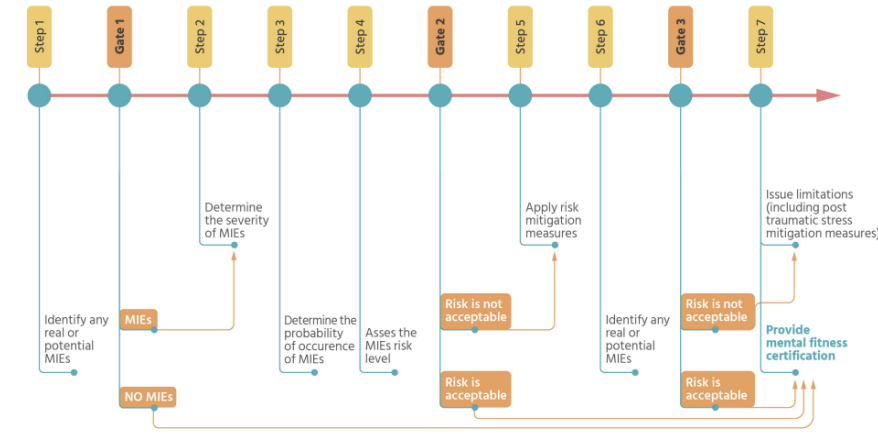


Result #1

1. A Mental Incapacitation Risk Assessment Process (MIRAP), for use by Aeromedical Examiners (AMEs) and Medical Assessors (MAs), and related:

- **Training** curricula and materials, targeted to AMEs
- **Guidance** material, targeted to policy makers
- **Information** material targeted to Peer Support Groups

THE MIRAP STEPS



Legend	Notes
<ul style="list-style-type: none"> Risk unacceptable Risk unacceptable, but may in some cases be acceptable through review and specific mitigation. An Aeromedical Operational Board (AMOB) should in such cases be employed* Risk may be acceptable - may require operational and/or personal risk reduction** Risk acceptable 	<p>*given random onset of event unconnected to flight. If event is connected to flying activity (e.g. Murder suicide or flight anxiety) use career frequency rather than yearly.</p> <p>**Operational risk reduction could be co-pilot, backup crew, time window to land helicopter etc. Personal risk factors could be close follow-up by psychologist, peer-support etc. Formalised risk reduction is documented and required in the certificate.</p>

MESAFE Matrix

			Catastrophic - A	Hazardous - B	Major - C	Minor - D	Negligible - E
			May cause catastrophic event	May cause flight safety critical event	May compromise flight safety	Reduced effectiveness and capacity to adapt to operational requirements	Minimal impact on flight safety
Risk assessment of mental health	Frequency per year	Flight hours between each event (approx)*	Total Incapacitation	Severe Incapacitation	Major decrement on performance	Minor to moderate performance compromise, may continue duties	Minimal impact on performance
Frequent 5	>1/month	100	5A	5B	5C	5D	5E
Occasional 4	1-10 times	1,000	4A	4B	4C	4D	4E
Remote 3	10-99%	10,000	3A	3B	3C	3D	3E
Improbable 2	1-10%	100,000	2A	2B	2C	2D	2E
Extremely Improbable 1	<1%	>1,000,000	1A	1B	1C	1D	1E

Result #2

- **44 evidence-based recommendations**, targeted to policy makers, for updating the mental fitness certification requirements in Part-MED and Part-ATCO.MED in line with the medical developments
 - **Impact assessment** of the proposed recommendations

AREAS OF THE RECOMMENDATIONS	RECOMMENDATION NUMBER	RECOMMENDATION
Recommended terminology	Recommendation #1	It is recommended to focus on mental incapacitation events rather than on mental disorders.
	Recommendation #2	It is recommended to implement a risk assessment approach, in which the safety risk caused by mental incapacitation events is assessed by means of an estimation of their severity and the probability if they would occur on-duty.
	Recommendation #3	It is recommended to indicate with Mental Health Specialist the Clinical Aviation Psychologists and Aviation Psychiatrists. These professionals have expertise with mental health and the assessment and treatment of mental disorders. They also have knowledge of the aviation domain.
	Recommendation #4	It is recommended to implement a multidisciplinary collaboration, by means of the so called Aeromedical Operational Board (AMOB).
Recommendations concerning the scope of the aeromedical mental health assessment	Recommendation #5	It is recommended to identify any real or potential mental incapacitation events which the applicant could incur to in the near future. The expected output is a list of possible MIEs or the reasonable confirmation that no MIEs are foreseen in the near future.
	Recommendation	When real or potential MIEs are identified, it is recommended to

Options	Do nothing	Implement the proposed recommendations
		Weighted score
Safety	-6	9
Economic	0	-2
Social	0	2
Operational	2	-1



Result #3

- A **user-centered toolkit** for mental health self-management, targeted to certificate holders, which we called MINDSAFE



How would you rate your current well-being status?

Take some minutes to give scores to each element of the pillars: scores range from 1 (very low) to 5 (very high). As soon as you are done, identify the ones you would be able to nourish as well as the ones that are challenging to increase.

MY WELL-BEING					
BIOLOGICAL	MY SCORE	PSYCHOLOGICAL	MY SCORE	SOCIAL	MY SCORE
Sleep		Self-acceptance		Increased social support and support network	
Exercise		Environmental mastery		Decreased social pressure	
Diet		Personal growth		Education	
Relaxation techniques		Autonomy and self-confidence		Material and immaterial gratifications	
Self-care		Purpose in life		Social status	



Result #4

- A **glossary** of mental health for aviation safety

GLOSSARY OF MENTAL HEALTH FOR AVIATION SAFETY



WHAT IS IN THE GLOSSARY?

The glossary consists in 38 cards to raise awareness and promote open discussion about mental health and safety. They reflect main findings from the MESAFE project and support the adoption of a common terminology among the operational experts, the Aeromedical Examiners (AMEs) and Medical Assessors, the pilots and ATCOs, the Peer Support Groups and all those engaged in providing a safe and efficient air transport.



CARD 23

MENTAL INCAPACITATION EVENTS (MIEs)

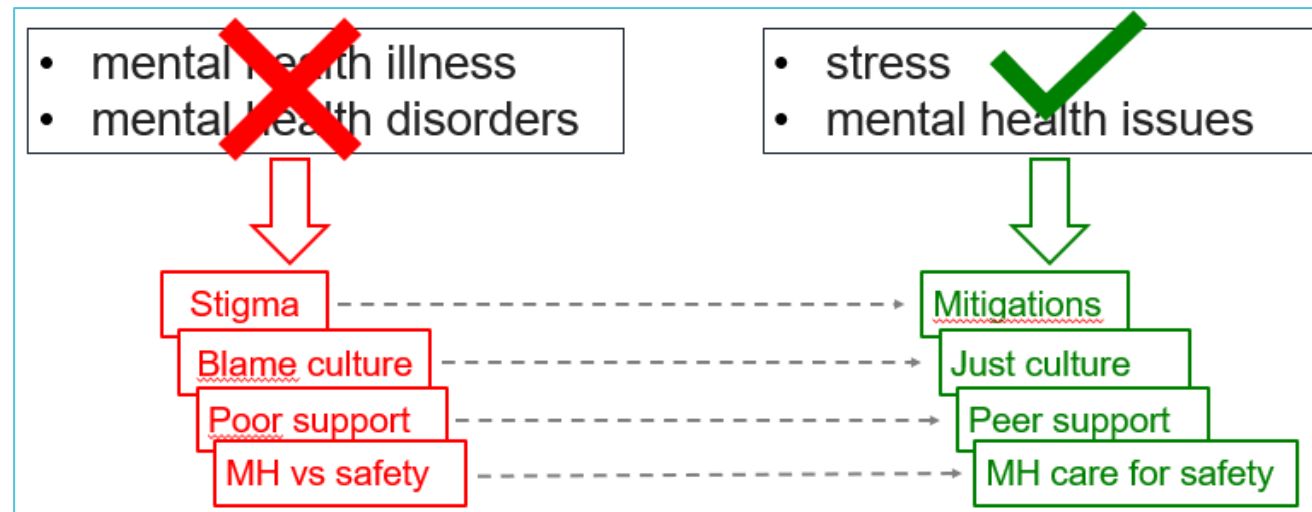
MIEs are mental disorders' symptoms potentially affecting the individual's behaviour, emotional regulation, or cognitive functioning to the extent that the safety of flight or air traffic control operations is compromised. Panic attack, self-harm, agitation, reduced alertness and executive functioning are some examples of MIEs.

Mental incapacitation risk assessments proactively address the probability that MIE(s) occur on-duty and their safety impact.



Our vision: end the stigma

“Just as we do not blame or consider weak a pilot who is at risk of a heart attack on board, in the same way we should not blame or consider weak a pilot who is at risk of a panic attack or intrusive thoughts while on duty. Instead, we should take care of.”



Safety practitioner driven approach

- MESAFE is a safety practitioner driven project, fostering the **communication and cooperation** among Aeromedical Examiners, Medical Assessors, Mental Health Specialists, pilots, ATCOs and peer support groups, **for the sake of civil protection of citizens** in the fight against safety hazards related to mental disorders during flight and air traffic control
- The project has put **at the centre of the research** not only Aeromedical Examiners and Medical Assessors but **also the applicants (pilots and ATCOs)** and has assessed and evaluated how the mental fitness certification process affects them, and how they perceive it.



The MESAFE team

To achieve those objectives we have built a team composed of the following professional capacities:

- **Aviation psychology:** Paola Tomasello (MESAFE Tech Leader)
 - **Psychology:** François Brambati (Deputy Tech Leader)
- **Aviation psychiatry:** Diederik De Rooy
- **Aviation medicine:** Ries Simons & Anthony Sverre Wagstaff
- **Project management:** Paola Lanzi
- **Dissemination and stakeholders engagement:** Vera Ferraiuolo, Marta Cecconi



Share your highlights

- Use the hashtag #MESAFEconference
- Tag us on LinkedIn @MESAFE project



MESAFE project

#MESAFE will foster #safety in #aviation by proposing validated #MentalHealth assessment methods specific for the sector



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Website

<https://www.easa.europa.eu/en/research-projects/mesafe-mental-health>



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