

SESAAR		Active							LOC/APT	
ENV02		Airport Collaborative Environmental Management								
REG	ASP	MIL	APO	USE	INT	IND	NM	MET	AIS	USP

### Subject matter and scope

Implement or identify existing formal working partnership arrangements between ANSP, Airport and Aircraft Operators at individual airports to address and assess the environmental challenges at and around the vicinity of the airport. These challenges can be a significant constraining factor to efficient and sustainable operations.

Topics include but are not limited to:

- minimising noise and atmospheric emissions in particular CO2 and NOx (including fuel burn);
- introduction of new operational changes such as airspace design to include new entrants such as UAM, Hybrid and or hydrogen aircraft, different approach or departure procedures including CDO/CCO and PBN implementation, new airport infrastructure
- Compliance with airport-related legislation and environmental certification requirements
- Management of aircraft and airfield de-icing resulting from combined aircraft operations at the terminal airspace and ground.
- Adaptation to Climate Change (risk to infrastructure, de-icing strategies, water);
- Facilitate implementation and uptake of Sustainable Aviation Fuels;
- Contribute to robust community engagement dialogue and relations with local authorities.

CEM working arrangements will enable a greater understanding and awareness of interdependencies and facilitate jointly agreed solutions for sustainable environmental operational performance improvements that can benefit joint operations as well as local community engagement and relationships with local authorities.

NOTE FOR MILITARY AUTHORITIES: It is the responsibility of each military authority to review this Objective IN ITS ENTIRETY and address each of the SLoAs that the military authority considers RELEVANT for itself. This has to be done on top and above of the review of "MIL" SLoAs which identify actions EXCLUSIVE to military authorities.

NOTE: A CEM Online tool is available at the link below with the purpose of providing a common platform to assist key operational stakeholders at airports in setting up a CEM Working Arrangement and to demonstrate compliance with the CEM Specification's Requirements:  
<https://www.eurocontrol.int/portal/collaborative-environment-management-online>

### Applicability Area(s) & Timescale(s)

<b>Applicability Area</b> (Subject to local needs)					
<b>Timescales:</b>		<b>From:</b>	<b>By:</b>	<b>Applicable to:</b>	
FOC used for Analytics functioning only - not for implementation planning		31/05/2018		Applicability Area	
FOC used for Analytics functioning only - not for implementation planning			01/01/2030	Applicability Area	

### References

#### European ATM Master Plan

Ol step -	<a href="#">[AO-0703]-Aircraft Environmental Impact Management and Mitigation at and around Airports</a>									
	Enablers -	A/C-53	ENV-05	ENV-06	PRO-190	PRO-AC-53	PRO-ENV-12a	PRO-ENV-12b	PRO-ENV-13a	
		PRO-ENV-13b								
Ol step -	<a href="#">[AO-0705]-Reduced Water Pollution</a>									
	Enablers -	AIRPORT-34	ENV-06	PRO-075						
Ol step -	<a href="#">[AO-0706]-(Local) Monitoring of Environmental Performance</a>									
	Enablers -	AIRPORT-34	ENV-06	ENV-07						

Legend:	WXYZ-001	Covered by SLoA(s) in this objective	WXYZ-002 zzz	Covered by SLoA(s) in another objective Objective covering the enabler	WXYZ-003	Not covered in the Implementation Plan
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#### Applicable legislation

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: Annex VIII, paragraph 3.2 the EATMN, its systems and their constituents shall support, on a coordinated basis, new agreed and validated concepts of operation that improve the quality, sustainability and effectiveness of air navigation services' Regulation (EU) 598/2014 of the European Parliament and of the Council of 16 April 2014 on the establishment of rules and procedures with regard to the introduction of noise-related operating restrictions at Union airports within a Balanced Approach and repealing Directive 2002/30/EC. EC Directive 2002/49/EC, dated 25.06.2002 relating to the assessment and management of environmental noise. EC Directive 2008/50/EC, dated 21.05.2008 on ambient air quality and cleaner air for Europe. Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS). Annexes I, II and III amended by Commission Regulation (EU) 2017/1505 of 28 August 2017 amending Annexes I, II and III to Regulation (EC) No 1221/2009 of the European Parliament and of the Council on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS) Annex IV amended by Commission Regulation (EU) 2018/2026 of 19 December 2018 amending Annex IV to Regulation (EC) No 1221/2009 of the European Parliament and of the Council on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS) Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001 on national emission ceilings for certain atmospheric pollutants Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise. Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe.

### Essential Operational Changes

Airport and TMA performance

### SESAR Solution

### ICAO GANP - ASBUs

- none -

### Deployment Programme

- none -

### European Plan for Aviation Safety

- none -

### Operating Environments

Airport

## Stakeholder Lines of Action (SLoAs)

SLoA ref.	Title	From	By
ENV02-ASP01	Initiate and participate actively in formal collaborative working arrangements with the Airport and Aircraft Operators. Deliverable to identify and prioritise joint actions to minimise environmental impacts of air traffic procedures in and around the airport		
ENV02-ASP02	Train and raise awareness of controllers on the environmental impacts of aircraft operations and ways to improve performance		
ENV02-APO01	Initiate and participate actively in formal CEM working partnership arrangements with the ANSP and Aircraft Operators to minimise the environmental impact of air traffic procedures in and around the airport		
ENV02-APO02	Ensure appropriate and relevant performance data availability at Airports		
ENV02-APO03	Ensure appropriate Airport policy and procedures and, if required, relevant infrastructures needed to manage and mitigate pollution due to de-icing activities		
ENV02-APO04	Train and raise awareness of controllers on the environmental impacts of aircraft operations and ways to improve performance		
ENV02-USE01	Initiate and participate actively in formal working partnership arrangements with the ANSP and Airport to manage and minimise environmental impacts of air traffic procedures in and around the airport		
ENV02-AGY01	Provide assistance and guidelines to assist airports in setting up formal partnership arrangements between ATSP, Airport and Aircraft Operators for achieving control of environmental impact mitigation	<b>FINALISED</b>	

Description of finalised and deleted SLoAs is available on the eATM Portal @ [https://www.eatmportal.eu/working/depl/essip\\_objectives](https://www.eatmportal.eu/working/depl/essip_objectives)

## Expected Performance Benefits

<b>ENV02</b>	<b>Airport Collaborative Environmental Management</b>
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<b>Safety:</b>	-
<b>Capacity:</b>	Airports may see a gain in capacity if noise restrictions are lowered
<b>Operational Efficiency:</b>	Reduction of noise, fuel burn and CO2. Contributing to cost and Noise/CO2 savings for airlines and airports. Airports may see a gain in capacity if noise restrictions are lowered.
<b>Cost Efficiency:</b>	-
<b>Environment:</b>	Reduction of fuel use, noise, emissions and de-icing water pollution resulting from a structured collaborative approach that jointly identifies effective sustainable operational solutions for implementation and monitoring.
<b>Security:</b>	-

### Detailed SLoA Descriptions

<b>ENV02-ASP01</b>	<b>Initiate and participate actively in formal collaborative working arrangements with the Airport and Aircraft Operators. Deliverable to identify and prioritise joint actions to minimise environmental impacts of air traffic procedures in and around the airport</b>	<b>From:</b> -	<b>By:</b> -
<b>Action by:</b>	<b>ANS Providers</b>		
<b>Description &amp; purpose:</b>	Implement and or initiate formal CEM working arrangements. In parallel, provide proactive practical support to minimise environmental impact and secure or safeguard ATM capacity in supporting compliance to the relevant legislation. CEM joint actions should be endorsed and supported by senior management. The purpose of CEM is to facilitate collaboration between the key operational stakeholders at airports to address the environmental impacts and understand interdependencies caused by their combined air traffic operations. The CEM working arrangements can provide timely and accurate operational or environmental data that is relevant to locally identified and jointly agreed actions. These can include aircraft noise, introduction of new operational changes such as airspace design, new entrants such as UAM, hybrid and or hydrogen aircraft, different approach or departure procedures including CDO and PBN implementation, new airport infrastructure, de-icing, fuel use and atmospheric emissions or any other ATM-related environmental imperative that is locally important including Climate Change adaptation and provision of sustainable Aviation Fuels		
	<b>Note :Awareness and understanding of interdependencies. Jointly agreed environmental objectives, solutions and delivery plan, new procedures and trials, provision of data.</b>		
<b>Supporting material(s):</b>	<p>EUROCONTROL - Environmental Awareness Training Package            Url : <a href="https://trainingzone.eurocontrol.int/itp/pages/coursedescription.jsf?courseId=6220451&amp;catalogId=896425">https://trainingzone.eurocontrol.int/itp/pages/coursedescription.jsf?courseId=6220451&amp;catalogId=896425</a></p> <p>ICAO - Doc 9958 - Assembly Resolution A37-18: Consolidated statement of continuing ICAO policies and practices related to environmental protection - General provisions, noise and local air quality 10/2010            Url : <a href="https://store.icao.int/">https://store.icao.int/</a></p> <p>ICAO - Doc 9646 - Engine Exhaust Emissions Databank - First Edition / 12/1995            Url : <a href="http://www.icao.int/publications/Pages/catalogue.aspx">http://www.icao.int/publications/Pages/catalogue.aspx</a></p> <p>EUROCONTROL - SPEC-156 - EUROCONTROL Specification for Collaborative Environmental Management (CEM) - Edition 1.1 / 08/2018            Url : <a href="https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem">https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem</a></p> <p>ICAO - Doc 9829 - Guidance on the Balanced Approach to Aircraft Noise Management - Edition 2 / 10/2010            Url : <a href="https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement">https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement</a></p> <p>ICAO - Doc 9889 - Airport Air Quality Manual - Edition 1 / 01/2012            Url : <a href="https://www.icao.int/publications/Documents/9889_cons_en.pdf">https://www.icao.int/publications/Documents/9889_cons_en.pdf</a></p> <p>EUROCONTROL - Collaborative Environmental Management (CEM) animation            Url : <a href="https://youtu.be/nUIMYw28mrQ">https://youtu.be/nUIMYw28mrQ</a></p> <p>EUROCONTROL - CEM Online            Url : <a href="https://www.eurocontrol.int/portal/collaborative-environment-management-online">https://www.eurocontrol.int/portal/collaborative-environment-management-online</a></p> <p>ICAO - Doc 9184-Part 2 - Airport Planning Manual - Part 2 - Land Use and Environmental Control - Edition 4 / 01/2018            Url : <a href="https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes">https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes</a></p>		
<b>ATM Master Plan relationship:</b>	<p><a href="#">[ENV-05]-Guidance for community relations at airports</a>  <a href="#">[ENV-06]-Central environmental guidance web-portal</a>  <a href="#">[PRO-190]-ATC Procedures for Managing Environmental Noise Capacity</a>  <a href="#">[PRO-ENV-12b]-Exploiting new ATM and aircraft capabilities to optimise the aircraft noise footprint at airports (Airports)</a>  <a href="#">[PRO-ENV-13b]-Airport Procedures for exploiting new ATM and aircraft capabilities with a view to optimising atmospheric emissions from aircraft operations</a></p>		
<b>Finalisation criteria:</b>	<p>1 - A Local Memorandum of Understanding (MoU) or Memorandum of Cooperation (MoC) officially signed by the key operational stakeholders            2 - A Terms of Reference (TOR) document detailing the working arrangement or document of similar authority covering the implementation of CEM</p>		
<b>ENV02-ASP02</b>	<b>Train and raise awareness of controllers on the environmental impacts of aircraft operations and ways to improve performance</b>	<b>From:</b> -	<b>By:</b> -
<b>Action by:</b>	<b>ANS Providers</b>		

ENV02	Airport Collaborative Environmental Management		
<b>Description &amp; purpose:</b>	Provide a regular training and awareness course in accordance with demand. This should include potentially CDO/CCO aircraft noise, aircraft and airfield de-icing, aircraft fuel use and atmospheric emissions or any other ATM-related environment imperative locally planned including new entrants.		
<b>Supporting material(s):</b>	<p>ICAO - Doc 9958 - Assembly Resolution A37-18: Consolidated statement of continuing ICAO policies and practices related to environmental protection - General provisions, noise and local air quality 10/2010            Url : <a href="https://store.icao.int/">https://store.icao.int/</a></p> <p>ICAO - Doc 9993 - Continuous Climb Operations (CCO) Manual - Edition 1 / 11/2013            Url : <a href="https://cfapp.icao.int/tools/ATMiKIT/story_content/external_files/10260008117raft_en_CCO.pdf">https://cfapp.icao.int/tools/ATMiKIT/story_content/external_files/10260008117raft_en_CCO.pdf</a></p> <p>ICAO - Doc 9646 - Engine Exhaust Emissions Databank - First Edition / 12/1995            Url : <a href="http://www.icao.int/publications/Pages/catalogue.aspx">http://www.icao.int/publications/Pages/catalogue.aspx</a></p> <p>EUROCONTROL - SPEC-156 - EUROCONTROL Specification for Collaborative Environmental Management (CEM) - Edition 1.1 / 08/2018            Url : <a href="https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem">https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem</a></p> <p>EUROCONTROL - European CCO/CCO Action Plan            Url : <a href="https://www.eurocontrol.int/publication/european-continuous-climb-and-descent-operations-action-plan">https://www.eurocontrol.int/publication/european-continuous-climb-and-descent-operations-action-plan</a></p> <p>ICAO - Doc 9613 - Performance-based Navigation (PBN) Manual - Edition 4 / 03/2013            Url : <a href="https://store.icao.int/en/performance-based-navigation-pbn-manual-doc-9613">https://store.icao.int/en/performance-based-navigation-pbn-manual-doc-9613</a></p> <p>ICAO - Doc 9829 - Guidance on the Balanced Approach to Aircraft Noise Management - Edition 2 / 10/2010            Url : <a href="https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement">https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement</a></p> <p>ICAO - Doc 9889 - Airport Air Quality Manual - Edition 1 / 01/2012            Url : <a href="https://www.icao.int/publications/Documents/9889_cons_en.pdf">https://www.icao.int/publications/Documents/9889_cons_en.pdf</a></p> <p>EUROCONTROL - CDO refresher course for ATCs            Url : <a href="https://trainingzone.eurocontrol.int/ilp/pages/coursedescription.jsf?courseId=8117329&amp;catalogId=232380">https://trainingzone.eurocontrol.int/ilp/pages/coursedescription.jsf?courseId=8117329&amp;catalogId=232380</a></p> <p>EUROCONTROL - European CCO / CDO Task Force web pages            Url : <a href="https://www.eurocontrol.int/concept/continuous-climb-and-descent-operations">https://www.eurocontrol.int/concept/continuous-climb-and-descent-operations</a></p> <p>EUROCONTROL - CEM Online            Url : <a href="https://www.eurocontrol.int/portal/collaborative-environment-management-online">https://www.eurocontrol.int/portal/collaborative-environment-management-online</a></p> <p>ICAO - Doc 9184-Part 2 - Airport Planning Manual - Part 2 - Land Use and Environmental Control - Edition 4 / 01/2018            Url : <a href="https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes">https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes</a></p>		
<b>Finalisation criteria:</b>	1 - Continuous or refresher controller awareness training on the environmental impacts of aircraft operations has been implemented.		
<b>ENV02-APO01</b>	<b>Initiate and participate actively in formal CEM working partnership arrangements with the ANSP and Aircraft Operators to minimise the environmental impact of air traffic procedures in and around the airport</b>	From: -	By: -
<b>Action by:</b>	<b>Airport Operators</b>		
<b>Description &amp; purpose:</b>	Initiate and promulgate formal CEM partnership working arrangements with key operational stakeholders in order to manage and minimise environmental impacts of combined air traffic procedures in and around the airport. CEM can facilitate understanding and awareness of interdependencies and enable joint collaborative actions. Provide proactive practical mutual support to each other to ensure sustainable operations and secure or safeguard ATM capacity whilst facilitating compliance to relevant legislation. This can include aircraft noise, introduction of new operational changes such as airspace design, different approach or departure procedures including CDO and PBN implementation, new airport infrastructure, de-icing, fuel use and atmospheric emissions or any other ATM-related environment impact that is identified locally as important including Climate Change adaptation and provision of sustainable Aviation Fuels. CEM working arrangements should be endorsed and supported by senior management.		
	<b>Note :Awareness and understanding of interdependencies. Jointly agreed environmental objectives, solutions and delivery plan, new procedures and trials, provision of data.</b>		

ENV02	Airport Collaborative Environmental Management		
Supporting material(s):	EUROCONTROL - Environmental Awareness Training Package Url : <a href="https://trainingzone.eurocontrol.int/ilp/pages/coursedescription.jsf?courseId=6220451&amp;catalogId=896425">https://trainingzone.eurocontrol.int/ilp/pages/coursedescription.jsf?courseId=6220451&amp;catalogId=896425</a> ICAO - Doc 9958 - Assembly Resolution A37-18: Consolidated statement of continuing ICAO policies and practices related to environmental protection - General provisions, noise and local air quality 10/2010 Url : <a href="https://store.icao.int/">https://store.icao.int/</a> ICAO - Doc 9646 - Engine Exhaust Emissions Databank - First Edition / 12/1995 Url : <a href="http://www.icao.int/publications/Pages/catalogue.aspx">http://www.icao.int/publications/Pages/catalogue.aspx</a> EUROCONTROL - SPEC-156 - EUROCONTROL Specification for Collaborative Environmental Management (CEM) - Edition 1.1 / 08/2018 Url : <a href="https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem">https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem</a> ICAO - Doc 9829 - Guidance on the Balanced Approach to Aircraft Noise Management - Edition 2 / 10/2010 Url : <a href="https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement">https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement</a> ICAO - Doc 9889 - Airport Air Quality Manual - Edition 1 / 01/2012 Url : <a href="https://www.icao.int/publications/Documents/9889_cons_en.pdf">https://www.icao.int/publications/Documents/9889_cons_en.pdf</a> EUROCONTROL - Collaborative Environmental Management (CEM) animation Url : <a href="https://youtu.be/nUIMYw28mrQ">https://youtu.be/nUIMYw28mrQ</a> EUROCONTROL - CEM Online Url : <a href="https://www.eurocontrol.int/portal/collaborative-environment-management-online">https://www.eurocontrol.int/portal/collaborative-environment-management-online</a> ICAO - Doc 9184-Part 2 - Airport Planning Manual - Part 2 - Land Use and Environmental Control - Edition 4 / 01/2018 Url : <a href="https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes">https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes</a>		
ATM Master Plan relationship:	<a href="#">[PRO-ENV-12b]-Exploiting new ATM and aircraft capabilities to optimise the aircraft noise footprint at airports (Airports)</a>		
Finalisation criteria:	1 - A Local Memorandum of Understanding (MoU) or Memorandum of Cooperation (MoC) officially signed by the key operational stakeholders. 2 - A Terms of Reference (TOR) document detailing the working arrangement or document of similar authority covering the implementation of CEM.		
ENV02-APO02	Ensure appropriate and relevant performance data availability at Airports	From: -	By: -
Action by:	Airport Operators		
Description & purpose:	In accordance with locally agreed CEM priorities, ensure the availability of timely, accurate and relevant environmental information. This may entail investment in appropriate environmental monitoring or modelling systems at Airports in order to record and monitor locally significant environmental impacts that could include noise, introduction of new operational changes such as airspace design, different approach or departure procedures including CDO and PBN implementation, new airport infrastructure, emissions, air quality, etc. This data availability is essential in support of the continuous performance improvement process. In particular, it should be possible to determine the amount of airport related versus external pollution.		
Supporting material(s):	EUROCONTROL - Environmental Awareness Training Package Url : <a href="https://trainingzone.eurocontrol.int/ilp/pages/coursedescription.jsf?courseId=6220451&amp;catalogId=896425">https://trainingzone.eurocontrol.int/ilp/pages/coursedescription.jsf?courseId=6220451&amp;catalogId=896425</a> ICAO - Doc 9958 - Assembly Resolution A37-18: Consolidated statement of continuing ICAO policies and practices related to environmental protection - General provisions, noise and local air quality 10/2010 Url : <a href="https://store.icao.int/">https://store.icao.int/</a> ICAO - Doc 9646 - Engine Exhaust Emissions Databank - First Edition / 12/1995 Url : <a href="http://www.icao.int/publications/Pages/catalogue.aspx">http://www.icao.int/publications/Pages/catalogue.aspx</a> EUROCONTROL - SPEC-156 - EUROCONTROL Specification for Collaborative Environmental Management (CEM) - Edition 1.1 / 08/2018 Url : <a href="https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem">https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem</a> ICAO - Doc 9829 - Guidance on the Balanced Approach to Aircraft Noise Management - Edition 2 / 10/2010 Url : <a href="https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement">https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement</a> ICAO - Doc 9889 - Airport Air Quality Manual - Edition 1 / 01/2012 Url : <a href="https://www.icao.int/publications/Documents/9889_cons_en.pdf">https://www.icao.int/publications/Documents/9889_cons_en.pdf</a> EUROCONTROL - Collaborative Environmental Management (CEM) animation Url : <a href="https://youtu.be/nUIMYw28mrQ">https://youtu.be/nUIMYw28mrQ</a> EUROCONTROL - CEM Online Url : <a href="https://www.eurocontrol.int/portal/collaborative-environment-management-online">https://www.eurocontrol.int/portal/collaborative-environment-management-online</a> ICAO - Doc 9184-Part 2 - Airport Planning Manual - Part 2 - Land Use and Environmental Control - Edition 4 / 01/2018 Url : <a href="https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes">https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes</a>		
ATM Master Plan relationship:	<a href="#">[AIRPORT-34]-Airport equipped with (real time) environmental monitoring systems</a> <a href="#">[ENV-05]-Guidance for community relations at airports</a> <a href="#">[ENV-06]-Central environmental guidance web-portal</a> <a href="#">[ENV-07]-(Local) monitoring of environmental performance</a>		

<b>ENV02</b>	<b>Airport Collaborative Environmental Management</b>		
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<b>Finalisation criteria:</b>	1 - If relevant environmental monitoring or information systems have been implemented and deliver relevant and accurate performance data on time.		
<b>ENV02-APO03</b>	<b>Ensure appropriate Airport policy and procedures and, if required, relevant infrastructures needed to manage and mitigate pollution due to de-icing activities</b>	<b>From:</b> -	<b>By:</b> -
<b>Action by:</b>	<b>Airport Operators</b>		
<b>Description &amp; purpose:</b>	Develop policy, procedures and technical applications in collaboration with airlines and ANSPs to manage and control the pollution of ground and surface water coming from de-icing activities. When required, ensure the implementation of relevant mitigation infrastructure for collection, disposal and possible treatment of fluids.		
<b>Supporting material(s):</b>	ICAO - Doc 9958 - Assembly Resolution A37-18: Consolidated statement of continuing ICAO policies and practices related to environmental protection - General provisions, noise and local air quality 10/2010 Url : <a href="https://store.icao.int/">https://store.icao.int/</a> ICAO - Doc 9646 - Engine Exhaust Emissions Databank - First Edition / 12/1995 Url : <a href="http://www.icao.int/publications/Pages/catalogue.aspx">http://www.icao.int/publications/Pages/catalogue.aspx</a> EUROCONTROL - SPEC-156 - EUROCONTROL Specification for Collaborative Environmental Management (CEM) - Edition 1.1 / 08/2018 Url : <a href="https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem">https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem</a> ICAO - Doc 9829 - Guidance on the Balanced Approach to Aircraft Noise Management - Edition 2 / 10/2010 Url : <a href="https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement">https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement</a> ICAO - Doc 9889 - Airport Air Quality Manual - Edition 1 / 01/2012 Url : <a href="https://www.icao.int/publications/Documents/9889_cons_en.pdf">https://www.icao.int/publications/Documents/9889_cons_en.pdf</a> EUROCONTROL - Collaborative Environmental Management (CEM) animation Url : <a href="https://youtu.be/nUIMYw28mrQ">https://youtu.be/nUIMYw28mrQ</a> EUROCONTROL - CEM Online Url : <a href="https://www.eurocontrol.int/portal/collaborative-environment-management-online">https://www.eurocontrol.int/portal/collaborative-environment-management-online</a> ICAO - Doc 9184-Part 2 - Airport Planning Manual - Part 2 - Land Use and Environmental Control - Edition 4 / 01/2018 Url : <a href="https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes">https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes</a>		
<b>ATM Master Plan relationship:</b>	<a href="#">[PRO-075]-Airport infrastructure and procedures governing de-icing to isolate surface water systems, collect and dispose of run-off, use the least harmful chemical, reduce the quantities required, reduce delays and increase recovered volumes of fluid</a>		
<b>Finalisation criteria:</b>	1 - Information and procedures on de-icing pollution mitigation has been agreed and is published locally and accessible. 2 - Relevant infrastructure has been implemented, when and where required.		
<b>ENV02-APO04</b>	<b>Train and raise awareness of controllers on the environmental impacts of aircraft operations and ways to improve performance</b>	<b>From:</b> -	<b>By:</b> -
<b>Action by:</b>	<b>Airport Operators</b>		
<b>Description &amp; purpose:</b>	Provide regular training and awareness course. Identify and ensure that all relevant operational staff is covered. The course should include where relevant aircraft noise, aircraft and airfield de-icing, aircraft fuel use and atmospheric emissions or any other locally identified environmental impact.		
<b>Supporting material(s):</b>	EUROCONTROL - Environmental Awareness Training Package Url : <a href="https://trainingzone.eurocontrol.int/ilp/pages/coursedescription.jsf?courseId=6220451&amp;catalogId=896425">https://trainingzone.eurocontrol.int/ilp/pages/coursedescription.jsf?courseId=6220451&amp;catalogId=896425</a> ICAO - Doc 9958 - Assembly Resolution A37-18: Consolidated statement of continuing ICAO policies and practices related to environmental protection - General provisions, noise and local air quality 10/2010 Url : <a href="https://store.icao.int/">https://store.icao.int/</a> ICAO - Doc 9646 - Engine Exhaust Emissions Databank - First Edition / 12/1995 Url : <a href="http://www.icao.int/publications/Pages/catalogue.aspx">http://www.icao.int/publications/Pages/catalogue.aspx</a> EUROCONTROL - SPEC-156 - EUROCONTROL Specification for Collaborative Environmental Management (CEM) - Edition 1.1 / 08/2018 Url : <a href="https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem">https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem</a> ICAO - Doc 9829 - Guidance on the Balanced Approach to Aircraft Noise Management - Edition 2 / 10/2010 Url : <a href="https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement">https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement</a> ICAO - Doc 9889 - Airport Air Quality Manual - Edition 1 / 01/2012 Url : <a href="https://www.icao.int/publications/Documents/9889_cons_en.pdf">https://www.icao.int/publications/Documents/9889_cons_en.pdf</a> EUROCONTROL - Collaborative Environmental Management (CEM) animation Url : <a href="https://youtu.be/nUIMYw28mrQ">https://youtu.be/nUIMYw28mrQ</a> EUROCONTROL - CEM Online Url : <a href="https://www.eurocontrol.int/portal/collaborative-environment-management-online">https://www.eurocontrol.int/portal/collaborative-environment-management-online</a> ICAO - Doc 9184-Part 2 - Airport Planning Manual - Part 2 - Land Use and Environmental Control - Edition 4 / 01/2018 Url : <a href="https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes">https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes</a>		
<b>Finalisation criteria:</b>	1 - Airport Operational staff awareness training on the environmental impacts of aircraft operations has been implemented and completed.		



ENV02		Airport Collaborative Environmental Management	
ENV02-USE01	Initiate and participate actively in formal working partnership arrangements with the ANSP and Airport to manage and minimise environmental impacts of air traffic procedures in and around the airport	From:	By:
		-	-
Action by:	Airspace Users		
Description & purpose:	Enter into formal CEM partnership working arrangements with key operational stakeholders in order to manage and minimise environmental impacts of combined air traffic procedures in and around the airport. CEM can facilitate understanding and awareness of interdependencies and enable joint collaborative actions. Provide proactive practical mutual support to each other to ensure sustainable operations and secure or safeguard ATM capacity whilst facilitating compliance to relevant legislation. This can include aircraft noise, introduction of new operational changes such as airspace design, new entrants, different approach or departure procedures including CDO and PBN implementation, new airport infrastructure, de-icing, fuel use and atmospheric emissions or any other ATM-related environment impact that is identified locally as important including Climate Change adaptation and provision of sustainable Aviation Fuels. CEM working arrangements should be endorsed and supported by senior management.		
	Note :Awareness and understanding of interdependencies. Jointly agreed environmental objectives, sustainable solutions and delivery plan, new procedures and trials, provision of robust data.		
Supporting material(s):	<p>EUROCONTROL - Environmental Awareness Training Package</p> <p>Url : <a href="https://trainingzone.eurocontrol.int/ilp/pages/coursedescription.jsf?courseId=6220451&amp;catalogId=896425">https://trainingzone.eurocontrol.int/ilp/pages/coursedescription.jsf?courseId=6220451&amp;catalogId=896425</a></p> <p>ICAO - Doc 9958 - Assembly Resolution A37-18: Consolidated statement of continuing ICAO policies and practices related to environmental protection - General provisions, noise and local air quality 10/2010</p> <p>Url : <a href="https://store.icao.int/">https://store.icao.int/</a></p> <p>ICAO - Doc 9646 - Engine Exhaust Emissions Databank - First Edition / 12/1995</p> <p>Url : <a href="http://www.icao.int/publications/Pages/catalogue.aspx">http://www.icao.int/publications/Pages/catalogue.aspx</a></p> <p>EUROCONTROL - SPEC-156 - EUROCONTROL Specification for Collaborative Environmental Management (CEM) - Edition 1.1 / 08/2018</p> <p>Url : <a href="https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem">https://www.eurocontrol.int/publication/eurocontrol-specification-collaborative-environmental-management-cem</a></p> <p>EUROCONTROL - European CCO/CDO Action Plan</p> <p>Url : <a href="https://www.eurocontrol.int/publication/european-continuous-climb-and-descent-operations-action-plan">https://www.eurocontrol.int/publication/european-continuous-climb-and-descent-operations-action-plan</a></p> <p>ICAO - Doc 9829 - Guidance on the Balanced Approach to Aircraft Noise Management - Edition 2 / 10/2010</p> <p>Url : <a href="https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement">https://www.icao.int/environmental-protection/Pages/noise.aspx#NoiseAbatement</a></p> <p>ICAO - Doc 9889 - Airport Air Quality Manual - Edition 1 / 01/2012</p> <p>Url : <a href="https://www.icao.int/publications/Documents/9889_cons_en.pdf">https://www.icao.int/publications/Documents/9889_cons_en.pdf</a></p> <p>EUROCONTROL - Collaborative Environmental Management (CEM) animation</p> <p>Url : <a href="https://youtu.be/nUIMYw28mrQ">https://youtu.be/nUIMYw28mrQ</a></p> <p>EUROCONTROL - CEM Online</p> <p>Url : <a href="https://www.eurocontrol.int/portal/collaborative-environment-management-online">https://www.eurocontrol.int/portal/collaborative-environment-management-online</a></p> <p>ICAO - Doc 9184-Part 2 - Airport Planning Manual - Part 2 - Land Use and Environmental Control - Edition 4 / 01/2018</p> <p>Url : <a href="https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes">https://store.icao.int/en/shop-by-areas/capacity-and-efficiency/aerodromes</a></p>		
ATM Master Plan relationship:	<p><a href="#">[ENV-05]-Guidance for community relations at airports</a></p> <p><a href="#">[PRO-AC-53]-Cockpit Procedure for Noise Abatement Departure Procedure</a></p> <p><a href="#">[PRO-ENV-12a]-Exploiting new ATM and aircraft capabilities to optimise the aircraft noise footprint at airports (Airlines)</a></p> <p><a href="#">[PRO-ENV-13a]-Airline Procedures for exploiting new ATM and aircraft capabilities with a view to optimising atmospheric emissions from aircraft operations</a></p>		
Finalisation criteria:	<p>1 - A Local Memorandum of Understanding (MoU) or Memorandum of Cooperation (MoC) officially signed by the key operational stakeholders.</p> <p>2 - A Terms of Reference (TOR) document detailing the working arrangement or document of similar authority covering the implementation of CEM</p>		
ENV02-AGY01	Provide assistance and guidelines to assist airports in setting up formal partnership arrangements between ATSP, Airport and Aircraft Operators for achieving control of environmental impact mitigation	From:	By:
		-	-
Action by:	CND		
Description & purpose:	To develop and promulgate the practical support needed to ensure that airport stakeholders introduce effective CEM at airports.		
	Note :Tools and interactive functionalities are available via the Eurocontrol web site.		
Finalisation criteria:	1 - Endorsement of the document 'Airport Environmental Partnership Ed. November 2008' by AOT/24 of 04/11/2008. <a href="http://www.eurocontrol.int/environment/gallery/content/public/documents/CEM_final_17%2011%2008.pdf">http://www.eurocontrol.int/environment/gallery/content/public/documents/CEM_final_17%2011%2008.pdf</a>		