

PCP		Removed							ECAC+	
FCM06		Traffic Complexity Assessment								
REG	ASP	MIL	APO	USE	INT	IND	NM	MET	AIS	USP

## Subject matter and scope

The traffic load management tool addressed by SESAR OI step CM-0101 (Automatic support for traffic load density management) is the predecessor of traffic complexity tools. The traffic complexity tools continuously monitor sector demand and evaluate traffic complexity (by applying predefined complexity metrics) according to a predetermined qualitative scale. The predicted complexity coupled with traffic demand enables ATFCM to take timely action to adjust capacity, or request the traffic profile changes in coordination with ATC and airspace users.

The rigid application of ATFCM regulations based on standard capacity thresholds as the pre-dominant tactical capacity measure needs to be replaced by a close working relationship between ANSPs and Network Manager, which would monitor both the real demand, the effective capacity of sectors having taken into account the complexity of expected traffic situation.

**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.

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

Applicability Area 1			
Applicability Area 2			
<b>Timescales:</b>	<b>From:</b>	<b>By:</b>	<b>Applicable to:</b>
Initial operational capability	01/01/2015		Applicability Area 1
Full operational capability		01/01/2022	Applicability Area 1 + Applicability Area 2

## References

### European ATM Master Plan

OI step -	<a href="#">[CM-0101]-Automated Support for Traffic Load (Density) Management</a>									
Enablers -	ER APP ATC 124									
OI step -	<a href="#">[CM-0103-A]-Automated Support for Traffic Complexity Assessment</a>									
Enablers -	ER APP ATC 93	NIMS-37	PRO-220a	PRO-220b	SWIM-APS- 03a	SWIM-APS- 04a	SWIM-INFR- 05a	SWIM-NET- 01a		
OI step -	<a href="#">[IS-0102]-Improved Management of Flight Plan After Departure</a>									
Enablers -	NIMS-02 FCM03, FCM06. 1	NIMS-20	PRO-005							
OI step -	<a href="#">- No OI Link -</a>									
Enablers -	NIMS-20									

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) No 677/2011 laying down detailed rules for the implementation of air traffic management (ATM) network functions and amending Regulation (EU) No 691/2010  
Regulation (EU) No 716/2014 on the establishment of the Pilot Common Project

### Essential Operational Changes

- none -

### SESAR Solution

#19 - Automated support for Traffic Complexity Detection and Resolution

### ICAO GANP - ASBUs

<b>FCM06</b>	<b>Traffic Complexity Assessment</b>
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- none -	
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#### Deployment Programme

- none -	
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#### European Plan for Aviation Safety

- none -	
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#### Operating Environments

En-Route
Network
Terminal Airspace

### Stakeholder Lines of Action (SLoAs)

SLoA ref.	Title	From	By
<b>FCM06-ASP01</b>	Implement Local Traffic Load Management tool	01/01/2015	01/01/2022
<b>FCM06-ASP02</b>	Receive, process and integrate ETFMS Flight Data (EFD)	01/01/2015	01/01/2022
<b>FCM06-ASP03</b>	Implement Local Traffic Complexity tools and procedures	01/01/2018	01/01/2022
<b>FCM06-NM01</b>	Provide EFD to the local traffic complexity tools	01/01/2015	01/01/2022
<b>FCM06-NM02</b>	Improved trajectory in NM systems	01/01/2015	01/01/2022
<b>FCM06-NM03</b>	Network Traffic Complexity Assessment	01/01/2015	01/01/2022

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>Safety:</b>	The better ATCO workload predictability via deployment of the traffic complexity assessment tool will lead to safety gains. Enhancement also through reduction in controller workload.
<b>Capacity:</b>	Increased through the better resource utilisation to enhance productivity and reduce controller workload.
<b>Operational Efficiency:</b>	Increased through use of more optimal routes leading to fuel saving and lower CO2 emissions.
<b>Cost Efficiency:</b>	-
<b>Environment:</b>	Reductions in emissions through use of more optimal routes.
<b>Security:</b>	-

### Detailed SLoA Descriptions

FCM06-ASP01	Implement Local Traffic Load Management tool	From:	By:
		Applicability Area 1: 01/01/2015	Applicability Area 1: 01/01/2022
<b>Action by:</b>	<b>ANS Providers</b>		
<b>Description &amp; purpose:</b>	The automated tools shall support the continuous monitoring of the traffic loads per network node (sector, waypoint, route, route-segment) according to declared capacities and provide support to the local resource management.		
<b>ATM Master Plan relationship:</b>	<a href="#">[ER APP ATC 124]-Basic Resource Management and Planning Tools.</a>		
<b>Finalisation criteria:</b>	1 - Tools supporting local traffic load management are implemented and available for operational use		
FCM06-ASP02	Receive, process and integrate ETFMS Flight Data (EFD)	From:	By:
		Applicability Area 1: 01/01/2015	Applicability Area 1: 01/01/2022
<b>Action by:</b>	<b>ANS Providers</b>		
<b>Description &amp; purpose:</b>	The local FDPS to receive, process and integrate EFD provided by NM in the local traffic complexity assessment tool. This activity is needed in order to supplement the local traffic count with the flight plan data from ETFMS.		
<b>Supporting material(s):</b>	SJU - SESAR Solution 19: Data Pack for automated support for traffic complexity detection and resolution Url : <a href="https://www.sesarju.eu/sesar-solutions/automated-support-traffic-complexity-detection-and-resolution">https://www.sesarju.eu/sesar-solutions/automated-support-traffic-complexity-detection-and-resolution</a> EUROCONTROL - Flight Progress Messages (FPM) document - 2.501 / 03/2019 Url : <a href="https://www.eurocontrol.int/publication/flight-progress-messages-fpm-document">https://www.eurocontrol.int/publication/flight-progress-messages-fpm-document</a>		
<b>ATM Master Plan relationship:</b>	<a href="#">[NIMS-20]-Provision, reception and processing of ATFCM flight progress messages</a>		

<b>FCM06</b>	<b>Traffic Complexity Assessment</b>		
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<b>Finalisation criteria:</b>	1 - Reception, processing and integration of EFD message has been implemented.		
<b>FCM06-ASP03</b>	<b>Implement Local Traffic Complexity tools and procedures</b>	From:	By:
		<b>Applicability Area 1:</b> 01/01/2018	<b>Applicability Area 1:</b> 01/01/2022
<b>Action by:</b>	<b>ANS Providers</b>		
<b>Description &amp; purpose:</b>	Local traffic Complexity assessment tools shall receive process and integrate EFD provided by NM.		
<b>Supporting material(s):</b>	SJU - SESAR Solution 19: Data Pack for automated support for traffic complexity detection and resolution Url : <a href="https://www.sesarju.eu/sesar-solutions/automated-support-traffic-complexity-detection-and-resolution">https://www.sesarju.eu/sesar-solutions/automated-support-traffic-complexity-detection-and-resolution</a>		
<b>ATM Master Plan relationship:</b>	<a href="#">[ER APP ATC 93]-Enhance Resource Management and Planning Tools to use Traffic Complexity Assessment</a> <a href="#">[PRO-220a]-ATC Procedures related to Detection and Resolution of Complexity, Density and Traffic Flow Problems</a> <a href="#">[PRO-220b]-FCM procedures to describe how detection and resolution of complexity, density or traffic flow issues are managed.</a>		
<b>Finalisation criteria:</b>	1 - The local traffic complexity tools and procedures are implemented documented and in operational use.		
<b>FCM06-NM01</b>	<b>Provide EFD to the local traffic complexity tools</b>	From:	By:
		<b>Applicability Area 1:</b> 01/01/2015	<b>Applicability Area 1:</b> 01/01/2022
<b>Action by:</b>	<b>NM</b>		
<b>Description &amp; purpose:</b>	Provide the EFD data to the local FDPSs.		
<b>Supporting material(s):</b>	SJU - SESAR Solution 19: Data Pack for automated support for traffic complexity detection and resolution Url : <a href="https://www.sesarju.eu/sesar-solutions/automated-support-traffic-complexity-detection-and-resolution">https://www.sesarju.eu/sesar-solutions/automated-support-traffic-complexity-detection-and-resolution</a> EUROCONTROL - Flight Progress Messages (FPM) document - 2.501 / 03/2019 Url : <a href="https://www.eurocontrol.int/publication/flight-progress-messages-fpm-document">https://www.eurocontrol.int/publication/flight-progress-messages-fpm-document</a>		
<b>ATM Master Plan relationship:</b>	<a href="#">[NIMS-20]-Provision, reception and processing of ATFCM flight progress messages</a>		
<b>Finalisation criteria:</b>	1 - Provision of EFD to ANSPs.		
<b>FCM06-NM02</b>	<b>Improved trajectory in NM systems</b>	From:	By:
		<b>Applicability Area 1:</b> 01/01/2015	<b>Applicability Area 1:</b> 01/01/2022
<b>Action by:</b>	<b>NM</b>		
<b>Description &amp; purpose:</b>	The NM systems adaptation activities (specifications, development and deployment) deal with improving the quality of the planned trajectory, thus enhancing flight planning and complexity assessment. They address the following functions: - Operational deployment of EFPL - Processing of ATC information - Processing of OAT FPL information - Support to mixed mode operations		
<b>Supporting material(s):</b>	SJU - SESAR Solution 19: Data Pack for automated support for traffic complexity detection and resolution Url : <a href="https://www.sesarju.eu/sesar-solutions/automated-support-traffic-complexity-detection-and-resolution">https://www.sesarju.eu/sesar-solutions/automated-support-traffic-complexity-detection-and-resolution</a>		
<b>ATM Master Plan relationship:</b>	<a href="#">[NIMS-21a]-Initial Flight Planning management enhanced to support 4D for Step 1</a> <a href="#">[NIMS-35]-Flight Planning management sub-system enhanced to process improved OAT flight plans</a>		
<b>Finalisation criteria:</b>	1 - NM scenario management tools and procedures are implemented, documented and in operational use		
<b>FCM06-NM03</b>	<b>Network Traffic Complexity Assessment</b>	From:	By:
		<b>Applicability Area 1:</b> 01/01/2015	<b>Applicability Area 1:</b> 01/01/2022
<b>Action by:</b>	<b>NM</b>		
<b>Description &amp; purpose:</b>	Implementation of scenario management tools in support of traffic complexity management in the pre-tactical phase. This tool is built on the planned trajectory information and allows to simulate options optimising the use of available capacity. It is intended to support NM operations by identifying the possible mitigation strategies to be applied at network or local level, in coordination with FMPs and airspace users. In addition there is a need to develop a procedure related to implementation of traffic count methodologies that do not impact trajectory calculation.		
<b>Supporting material(s):</b>	SJU - SESAR Solution 19: Data Pack for automated support for traffic complexity detection and resolution Url : <a href="https://www.sesarju.eu/sesar-solutions/automated-support-traffic-complexity-detection-and-resolution">https://www.sesarju.eu/sesar-solutions/automated-support-traffic-complexity-detection-and-resolution</a>		
<b>ATM Master Plan relationship:</b>	<a href="#">[NIMS-37]-Basic Complexity assessment tools</a> <a href="#">[PRO-220b]-FCM procedures to describe how detection and resolution of complexity, density or traffic flow issues are managed.</a>		
<b>Finalisation criteria:</b>	1 - NM scenario management tools and procedures are implemented, documented and in operational use		



