

Frequency Monitoring Code (FMC)

Between relief, expectations and operational practice

IFISA Meeting | Berlin | September 2026



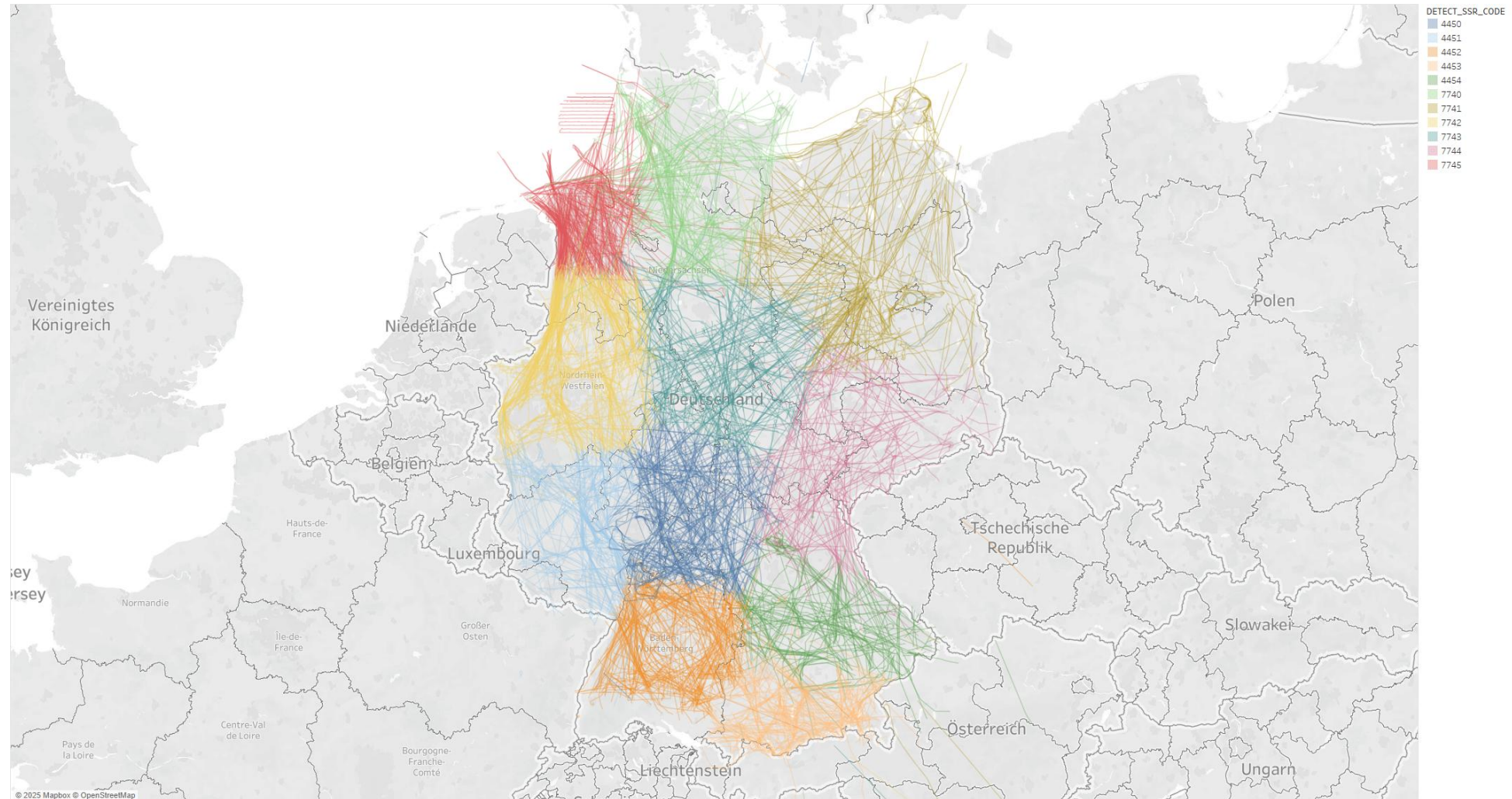
DFS Deutsche Flugsicherung

FIS working position under very high workload



FIS traffic on a summer day

10.08.2025



Overview and key messages

A balanced review focused on the lessons learned

1

Increasing demand

FIS demand has increased strongly over the past decade. High frequency load is now a real operational problem.

2

FMC means reachability

FMC shows that a pilot is monitoring the frequency and can be contacted. It is not a reduced FIS service.

3

Relief depends on the situation

Possible relief depends on traffic level, Mode-S and radio coverage, correct use by pilots and available FIS capacity.

4

Clear expectations are important for safety

The main challenge is not the code itself.
It is the common understanding of “reachable without receiving a service”.

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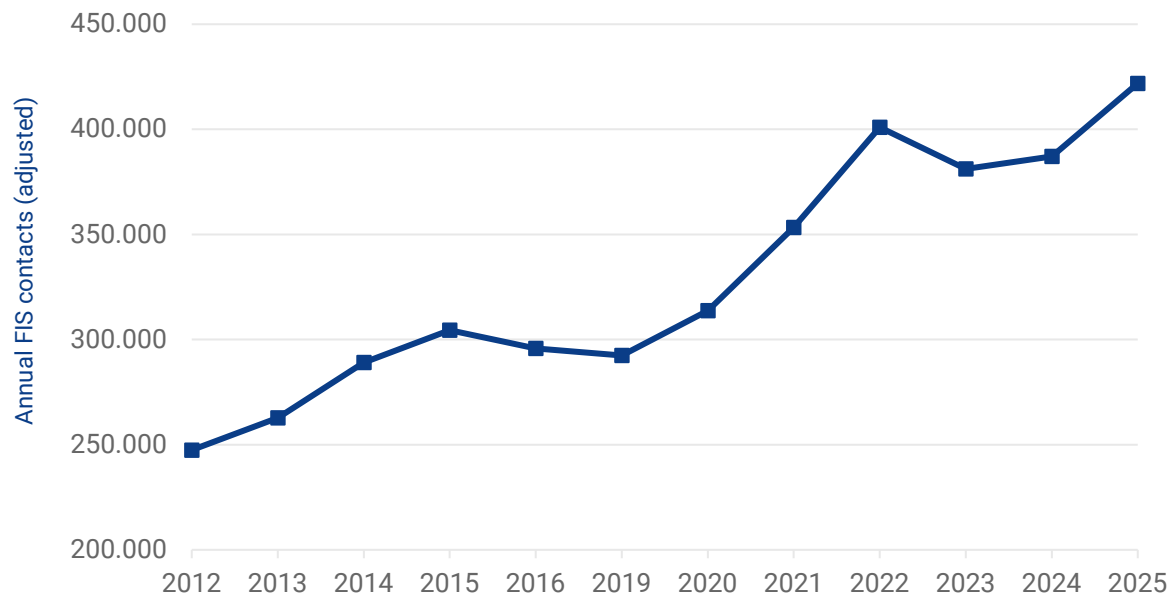
Interim review only

The 2026 trial is still running. This presentation shares interim observations, not a final recommendation.

Why FMC is tested

A political request met an operational need for frequency relief

Long term demand: FIS traffic keeps rising



Origin of the requirement

The requirement did not come from FIS operations. It was a political, top-down request to reduce frequency load and improve flight safety.

Operational challenge

FIS frequencies frequently reach their capacity limits. Radio calls for initial contact and leaving the frequency add to this load.

Basic idea

The basic idea is simple: pilots monitor the frequency and remain reachable, as in listening squawk systems used in other countries. The challenge is to provide reachability without creating the expectation of a service.

Discussion: Can “reachable” and “receiving a service” be clearly separated in daily operations?

What we learned in 2025 and changed in 2026

The 2025 lessons led to clearer rules for the 2026 trial

**2025
first trial**

**Lessons
learned**

**2026
extended trial**

**Final assessment
pending**

What was clarified

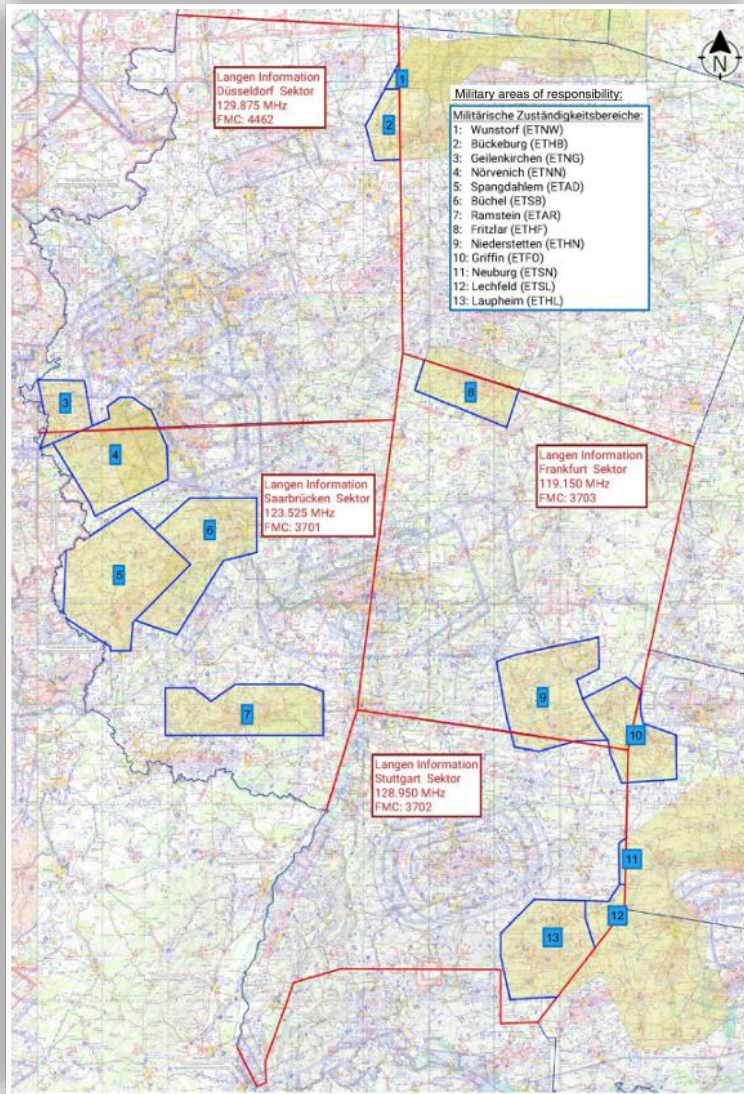
- Explain the limits clearly and do not promise a service
- Simplify the formal procedure
- No entitlement to traffic information or collision warning
- Regular FIS always has priority

Open points

- Feedback remains mixed
- Relief is seen mainly under suitable conditions
- Mode-S, radio and sector issues remain
- last two trial month and the final evaluation are still outstanding

2026 extended trial setup

The same basic procedure is now being tested in four Langen FIS sectors



Trial period

16 April to 29 October 2026. This presentation reflects interim observations only.

Four FMC sectors

Düsseldorf (DL), Frankfurt (DF), Saarbrücken (DR) and Stuttgart (DS).

Prerequisites

Mode-S, Mode C, functioning radio, correct sector frequency and continuous listening watch.

Technical and operational limits

SSR/Mode-S and radio coverage limitations, especially below 3,000 ft MSL; no FMC in military AoRs.

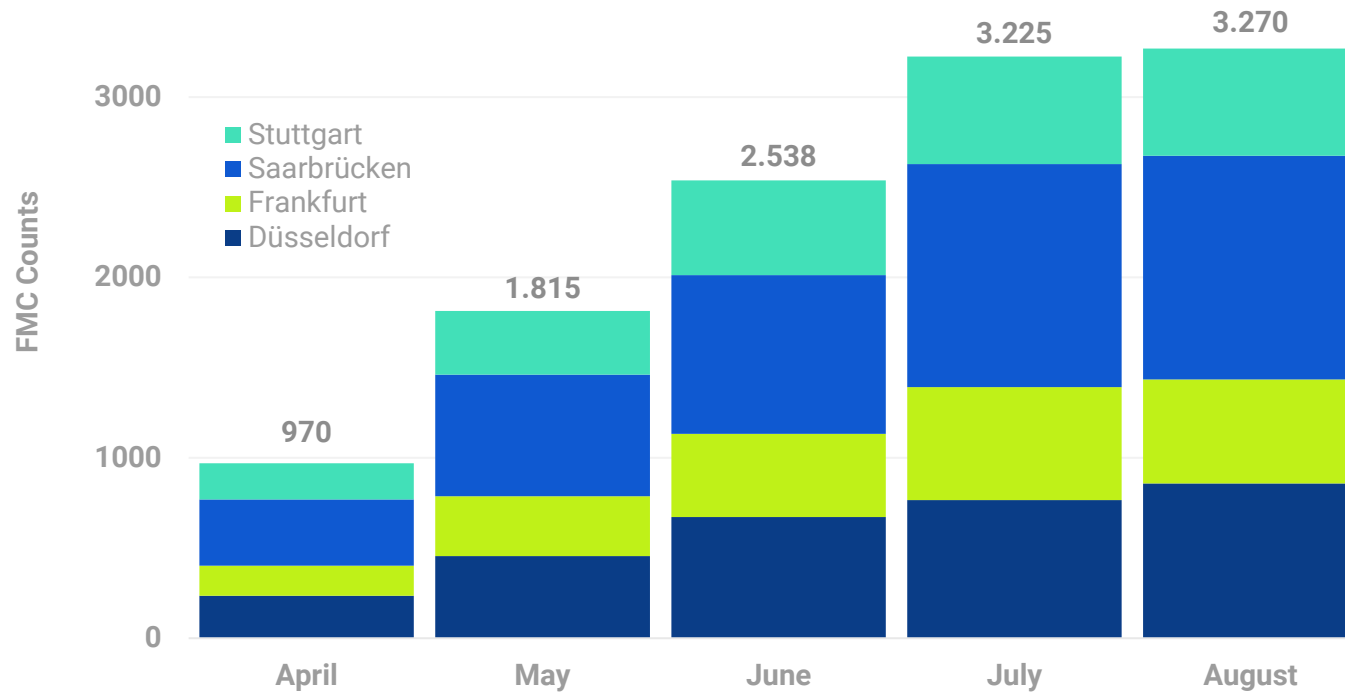
Basic principle

The extended trial makes the limits clearer: FMC means reachability, but it does not guarantee support from FIS.

What the 2026 data shows so far

FMC use increased from April to August.

FMC use expanded during the 2026 trial



April - August 2026

11.818 FMC counts across DL, DF, DR and DS

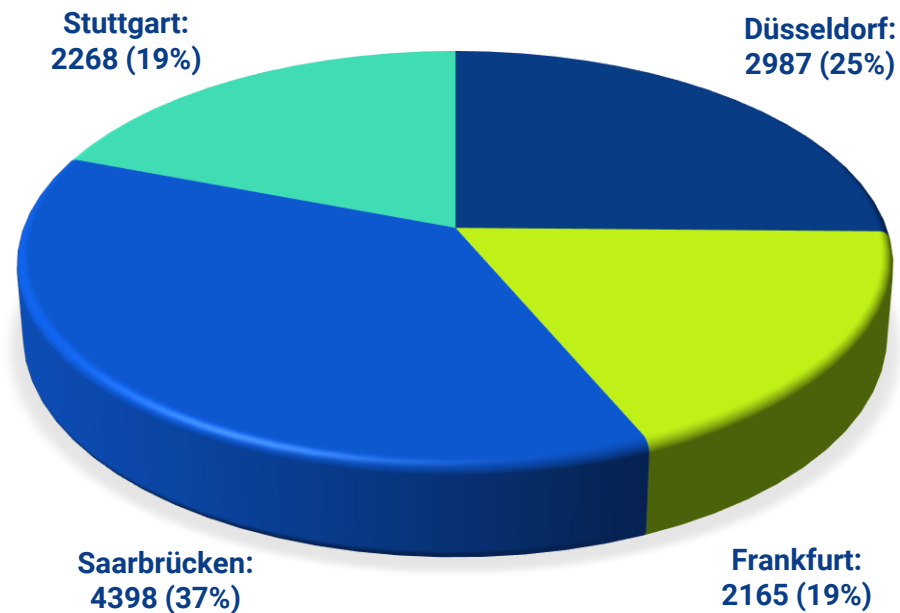
+237% from April to August monthly FMC volume

FMC counts are raw values

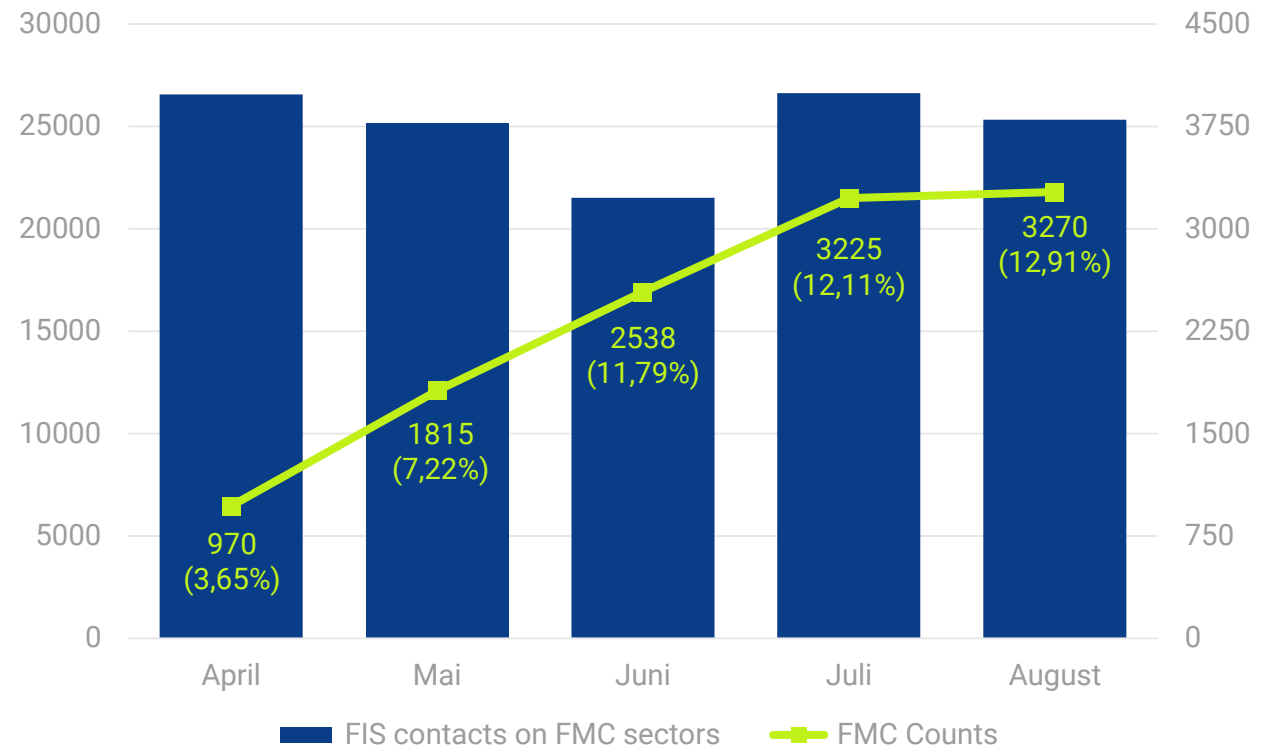
FMC use differs between sectors

FMC use varies by sector. Traffic volume alone does not explain the differences.

FMC distribution by sector (April – August 2026)



FMC volume rose while sector traffic fluctuated



FMC counts increased while sector traffic varied. Pilot awareness, sector conditions and experience with the procedure may also influence the figures.

Where FMC can work well

Under suitable conditions, FMC can improve reachability and reduce routine radio calls

Low or moderate traffic

There are fewer initial calls, fewer calls when leaving the frequency and less strip handling. FIS staff also reported cases in which FMC aircraft answered immediately.

Correct use by pilots

FMC works best when pilots select the correct code, monitor the correct frequency and understand that they are not receiving FIS.

Reliable technical coverage

Mode-S, altitude reporting and radio coverage are essential for practical use.

"Every FMC aircraft I contacted responded immediately."

"Correctly applied, it can provide a certain relief for us."

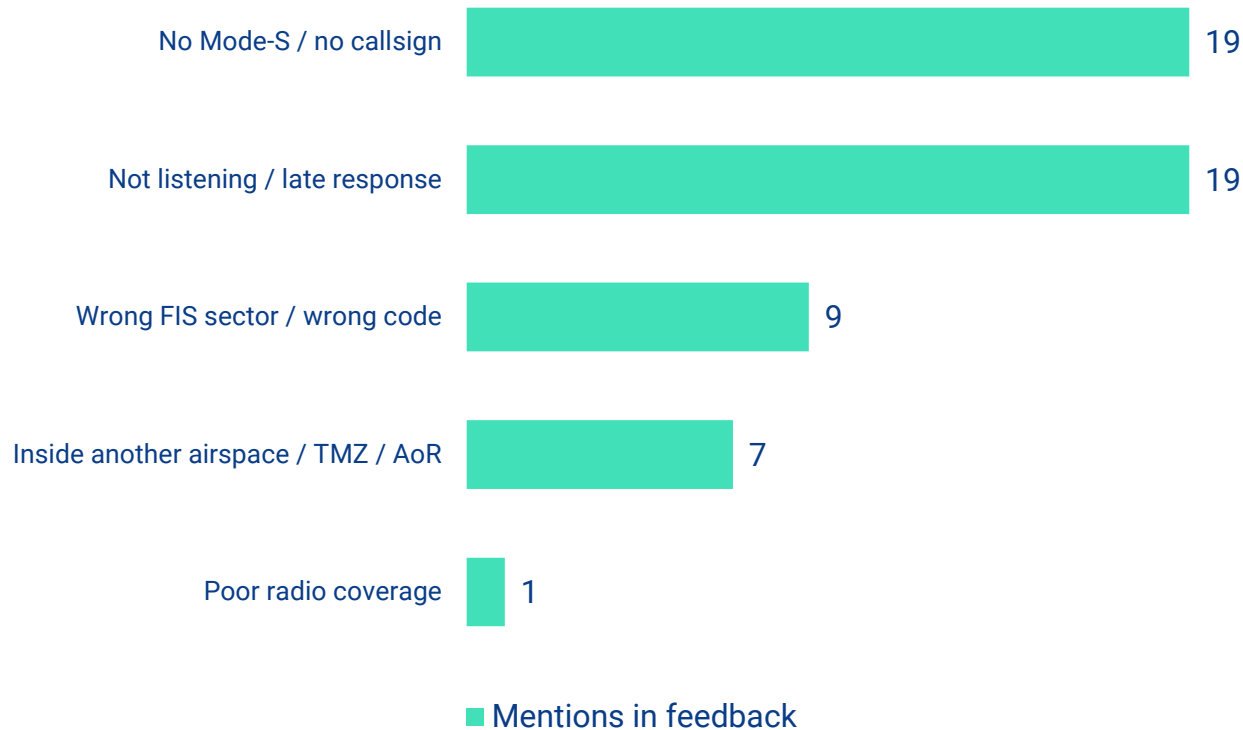
"At the moment: 8 FIS aircraft and 10 FMC aircraft. Totally relaxed."

There are positive experiences, but only under suitable conditions.

Where FMC causes problems

Under less suitable conditions, FMC can create additional workload

Why FMC could not be applied as intended



Main limitation

FMC reduces radio calls only if it does not lead to more monitoring, searching or uncertainty.

"In high traffic, FMC aircraft simply disappear from attention and are only called if they create direct conflict."

"Even with no aircraft on frequency, you cannot mentally switch off because an FMC aircraft may appear at any time."

Repeated problems include missing Mode-S, late replies, the wrong sector or code, misunderstandings about airspace and unclear expectations.

The main lesson is not technical

The code is simple. The common understanding is not.

Possible false sense of safety

If pilots understand FMC as “FIS-light”, they may expect a service that FMC does not provide.

Expectation management

Pilots and FIS staff need the same understanding of what reachability means and what FMC does not provide.

Additional monitoring

If FIS staff try to identify or continuously monitor FMC aircraft, the workload may shift rather than decrease.

Unclear role and responsibility

Being formally “not responsible” can conflict with professional practice and the wish to provide support.

Relief depends on conditions

FMC may reduce radio calls, but not necessarily mental workload, especially during high traffic.

Discussion trigger

When can a well-intended concept of reachability create an operational risk?

Interim view

FMC should not be presented as an automatic reduction of FIS workload

A careful description

FMC is a procedure that makes pilots reachable without providing FIS.

No guaranteed service

It does not provide a guarantee of FIS, traffic information, collision warning or alerting service.

No automatic relief

It may reduce frequency load in some situations, but it can increase mental workload in others.

Further evaluation is useful

The trial shows how a small procedural change can affect expectations, roles and mental workload.

This is not a general recommendation. The 2026 trial is still running. A final assessment requires the complete data from the full trial period.

What FMC is and what it is not

A simple technical procedure with clearly limited services

FIS

- Active registration with FIS
- Known traffic and flight intentions
- FIS provision, including alerting service
- Traffic information where possible
- Sector change and log-off handled by radio



FMC

- No registration with FIS
- Pilot sets the sector FMC and monitors the frequency
- No entitlement to FIS, traffic information, collision warning or alerting service
- FIS may contact the pilot if workload and technical means allow
- Pilot changes FMC/frequency independently

FMC means reachability. It does not guarantee support from FIS.

Questions for discussion

What should other ANSPs consider before using a similar procedure?

1

Limits of the service

Can “reachable” and “receiving a service” remain clearly separated in practice?

2

Technical requirements

When do gaps in Mode-S or radio coverage make the procedure impractical?

3

Human factors

How much additional monitoring and mental workload can FMC create?

4

Pilot communication

How should FMC be explained to prevent the idea of “FIS-light”?

5

Success criteria

Should success be measured by frequency load, workload, safety aspects or all three?

Thank you!

