

# M-346 ITS Interoperable by Design

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# SUMMARY

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## Overview - 1

The M-346 Advanced Trainer Aircraft has been designed around the concept of interoperability as a key factor, in order to provide improved Teaching Effectiveness capabilities compared to the other existing trainer aircraft.

The final aim is to achieve the most cost effective training by downloading training tasks from 4th/5th generation combat aircraft.

Since the first design phases the Aermacchi M-346 has been considered not only as an aircraft but as a networked element of the Leonardo's Integrated Training System (ITS); this also includes Ground Based Training System (GBTS) and Mission Support Station (MSS) assets, able to provide a Live Virtual Constructive (LVC) capability.

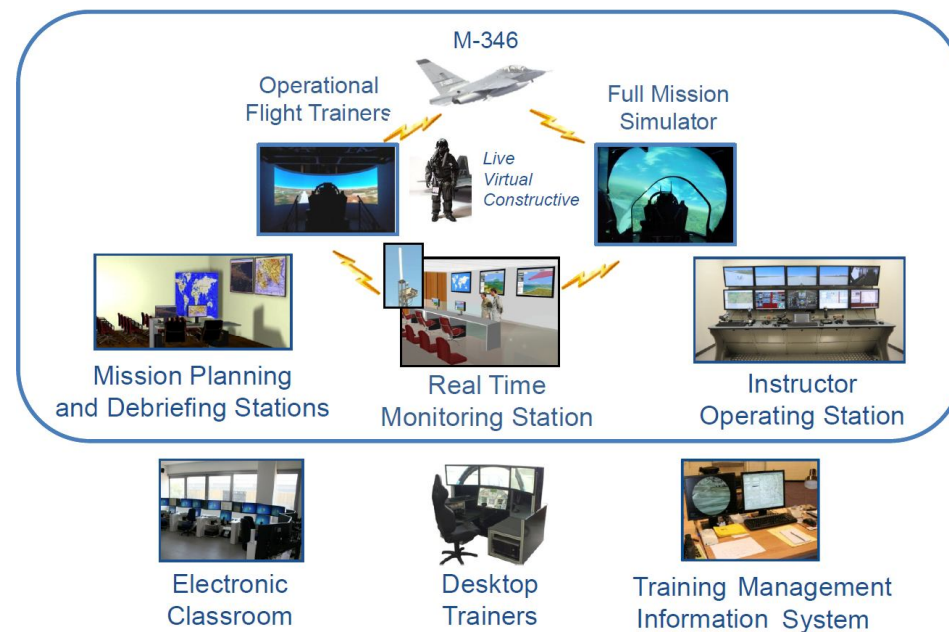
In order to maintain a full focus on modern training philosophy, the M-346 ITS guarantees interoperability capability that takes into account a logical thread going through Avionics, Embedded Simulation, Human Machine Interface (HMI), GBTS and MSS. This is allowed a suitable syllabus fully integrating the trainer aircraft and all the different GBTS training assets



## Overview - 2

Today, the M346 ITS platform, completed with its Live Virtual Constructive capability, has officially entered in service with the Italian Air Force (ItAF) at the 61st Wing based in Lecce.

LVC is definitively a System-of-System made with the most modern system integration technologies and it is one of the core components of the ITS; it includes real aircraft, simulators, additional training aids and ground/support stations. Besides, the M-346 ITS platform has been involved in international Red Air missions achieving considerable success.



## Design philosophy – TNA

M-346 ITS was conceived around specific Requirements derived from a Training Need Analysis (TNA) to fill the gap generated by new generation combat aircraft with training systems not designed for modern planes.

New generation Fighters features Technologies that, in addition with the modern era operational Scenarios, generates specific Training Needs.

Such design philosophy allowed M-346 ITS concept to improve the training effectiveness in terms of :

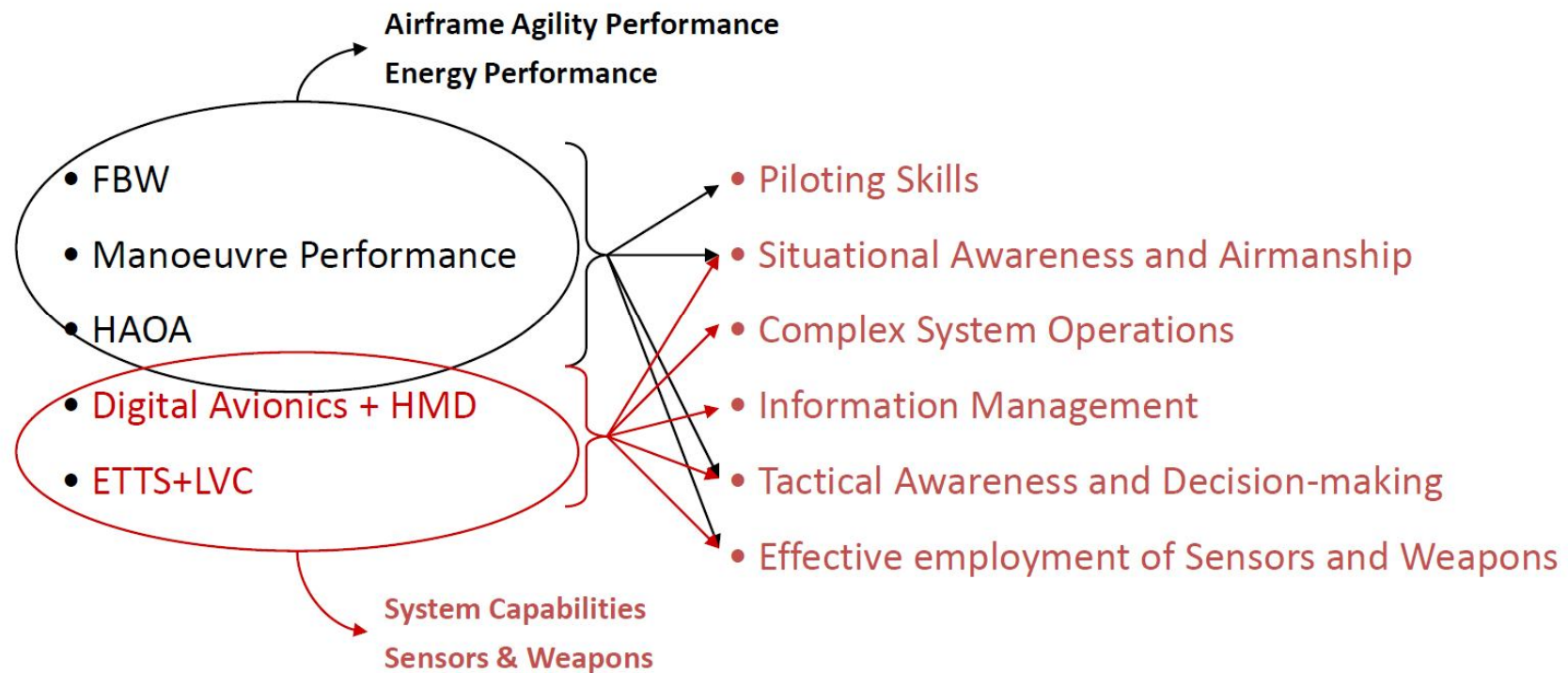
- piloting skills
- situational and tactical awareness
- complex system operations
- information management
- effective employment of sensors and weapons.



The interoperability concept coupled with M-346 airframe agility allowed M-346 ITS to be a step ahead to fulfill the gaps for the future training.

# Design philosophy – TNA

## Teaching Effectiveness related technology vs. Pilot oriented tasks







## M-346 ITS INTEROPERABILITY - 2

Spartan Alliance event showed an excellent level of interoperability among all the involved assets, highlighting in particular the multirole capability of the M-346 platform in a virtual scenario: M-346 simulators were involved in different missions with different roles, acting both as Red Air and Blue Air force.

One of the next steps to increase the interoperability training level will be to use LVC and MTDS capabilities in a unique training scenario where real aircraft, simulators and Computer Generated Forces (CGFs) can operate within the same and geographically distributed network, linked to each other through ground networks, data links and radio transmitters.

This additional capability will permit the execution of complex scenarios hardly available within a traditional training framework, with a significant reduction of costs and environmental impact.





THANK **YOU** FOR YOUR ATTENTION

