TF4 Report to MAWA Executive

Lt.Col. GArn Alessio GRASSO
alessio.grasso@aeronautica.difesa.it
+39 081 705 5172

Lt.Col. GArn Carlo RUBINO
carlo.rubino@eronautica.difesa.it
+39 06 4986 5411

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PRESENTATION OUTLINE

DGAA

AIM

To report on progress with respect to deliverables of project assigned to MAWA TF4:

EMACC - *European Military Airworthiness Certification Criteria*

MAOD - *Military Aircraft Occurrence Database*

TABLE OF CONTENTS

DGAA

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TABLE OF CONTENTS

DGAA

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TABLE OF CONTENTS

MAWA TF4 BACKGROUND (1/2)

DGAA

- **09/03/11 MAWA F02 MEETING [BRX]**
  - **Decision to create MAWA TF4 with the task to develop military certification codes/standards and safety requirements.**

- **09/06/05 MAWA AW WORKSHOP [OLOMOUC – CZ]**
  - **Decision to establish the European Military Airworthiness Certification Criteria to be used in the determination of military weapon systems' airworthiness.**

MAWA TF4 BACKGROUND (2/2)

DGAA

- **MAWA TF4 HISTORY**
  - **TF4 KOM (Naples, 12 August 09)**
    - Established TF4 Roadmap
    - Developed technical specificication requirement for EDA LOT 1 (EMACC)
  - **EDA LOT1**
    - EDA called for tender (Oct 09)
    - *FRAZER-NASH CONSULTANCY LTD* awarded EDA LOT 1 CONTRACT (Dec 09)
  - **TF4 Technical Meetings**
    - TF4#2 Brussel (20-21 Jan 2010)
    - TF4#3 Brussel (22 March 2010)
    - TF4#4 Estoril (25 May 2010)

EMACC PROJECT MISSION

DGAA

- To investigate the feasibility of producing harmonised military airworthiness certification criteria.

- The main objective is the development of:
  - A European equivalent of MIL-HDBK-516B, intended to be used to tailor the airworthiness basis for military weapons system in order to achieve Military Type Certification [*Deliverable D1*]
  - The sub-set of harmonised structural airworthiness criteria within the equivalent MIL-HDBK-516B document [*Deliverable D2*]

EMACC LOT 1 REQUIREMENTS

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Main Deliverables

- ***Deliverable D1***

  To provide a complete equivalent MIL-HDBK-516B document that points to the existing military (JSSGs, Def-Stan 00-970, STANAGs) and civil standards covering all the certification criteria.

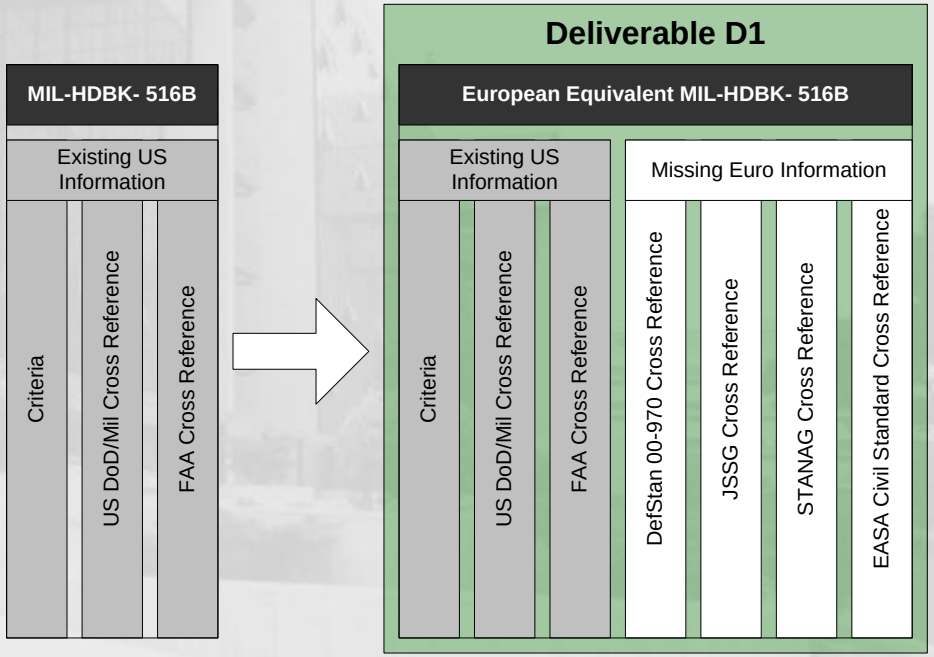
- ***Deliverable D2***

  Harmonised structural airworthiness criteria within the equivalent MIL-HDBK-516B document along with a program plan and cost estimate to harmonise all the criteria.

DELIVERABLE D1

DGAA

- **Approach**
  - **MIL-HDBK-516B starting point**
  - **DOORs database with existing 516B criteria, US DoD/Mil and FAA cross-references**
  - **Identify cross-references to European documents where equivalence is deemed possible:**
    - **Def Stan 00-970**
    - **STANAG**
    - **JSSG**
    - **EASA CS**



DELIVERABLE D1

DGAA

Progress to Date

- *Kick Off* meeting with TF4 on 20th January 2010
- Conceptual Report issued, including scope of work and approach for Deliverable D1 agreed with TF4
- Scoping exercise completed (Feb-March 2010)
  - MIL-HDBK-516B imported into DOORs
  - Format of Deliverable D1 confirmed with TF4
- Submission of Deliverables for Review
  - March, 31st

    Section 9 of MIL-HDBK-516B delivered to TF4 for review - *work completed - agreed*
  - June 30, th

    Complete sections 5, 7, 11, 12 and 13 of MIL-HDBK-516B delivered to TF4 for review - *work on progress*

DELIVERABLE D1

DGAA

Plan moving forwards

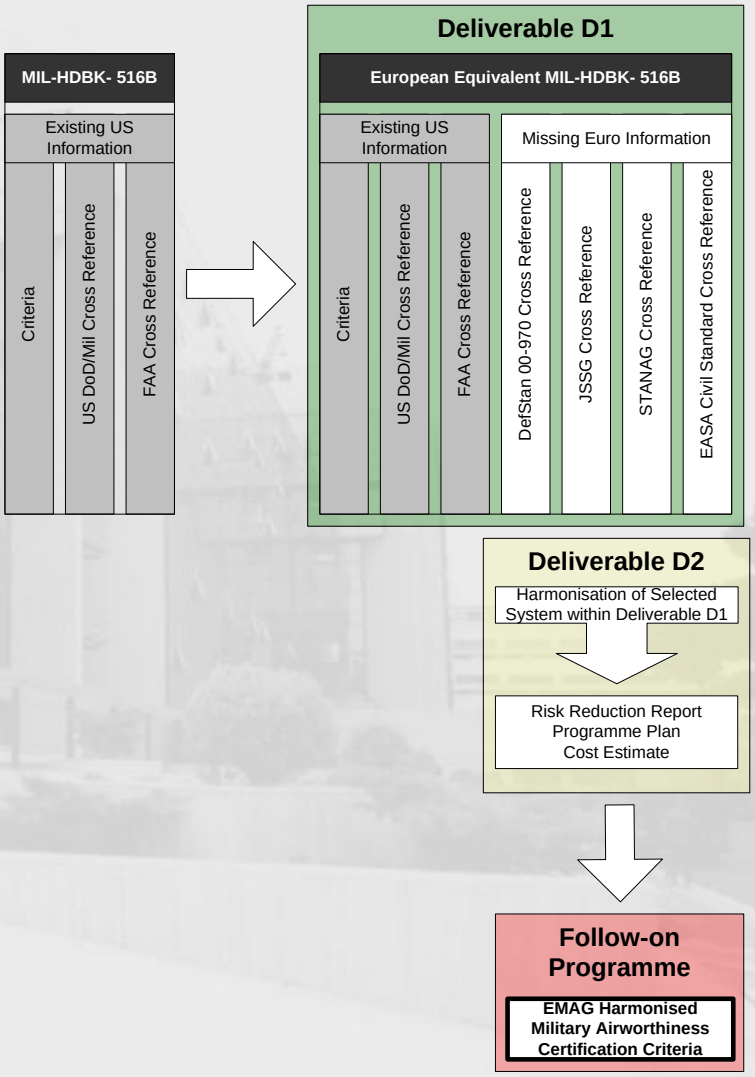
- Population of DOORs database
  - Present through to October 2010
  - Quarterly reviews with TF4 (September, December)
- Draft EMACC Study Report
  - November 2010
- Final EMACC Study Report
  - December 2010

DELIVERABLE D2

DGAA

Approach

- Deliverable D1 starting point
- Text Harmonisation of selected MIL-HDBK-516B Lines (5.1, 5.3, 5.4) against the following references:
  - Def Stan 00-970
  - STANAG
  - JSSG
  - EASA CS
- Provision of Risk Reduction Report for remainder of MIL-HDBK-516B in terms of:
  - Programme Plan
  - Cost Estimate



DELIVERABLE D2

DGAA

Progress to date

- Submission of *Drop 1* Deliverable for Review
  - 5.4 Lines (Damage tolerance and durability - fatigue) submitted on 31st March 2010
  - 5.4 Lines reviewed during TF4#3 meeting where it was agreed the first EUROPEAN HARMONIZED TEXT FOR FATIGUE REQUIREMENT
- Submission of *Drop 2* Deliverable for Review
  - 5.1 and 5.3 (Loads and Strength) submitted on 30th June 2010 for review during next TF4#4 meeting (TBD).
- Progression of Project Deliverables
  - *Drop 3* will be submitted by 30th September

TABLE OF CONTENTS

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MAWA TF4 MAOD BACKGROUND

DGAA

- **09/06/05 MAWA AW WORKSHOP [OLOMOUC – CZ]**
  - **Reccomendation to establish the exchange of information on accidents/occurences amongst European Military Authorities (all aircraft types).**
  - **EDA LOT 3**
    - **EDA CALLED FOR TENDER (OCT 09)**
    - ***AVIATION WORKS INTERNATIONAL* AWARDED EDA LOT 3 CONTRACT (DEC 09).**
  - **MAWA F05 MEETING (Brussels, 20-21 Jan 10)**
    - **TF4 TASKED TO MANAGE THE LOT 3 ACTIVITY**
    - **MAWA TF4 MAOD KOM (Naples, 15-16 Feb 10)**
    - **MAWA TF4 MAOD #2 (Naples, 2 Sep 10)**

EDA MAWA LOT 3 - Deliverables

D1 – a *Feasibility study* that points to existing civil and military databases standards and lessons learned, including military specific criteria.

D2 – a *demonstrator of MAOD* with *pilot nations (*)* to demonstrate on examples the feasibility and acceptance of the responsible national authorities.

The demonstrator shall be functional and accessible for responsible authorities via webpage.

(*)

MAOD Project Approach

DGAA

INPUTS TO PROJECT

Review and Agree the scope and objectives

Mapping the Existing Situation
-Assess the Current Military Framework towards Civil Framework
- Review and define MAWA detailed requirement (possible interviews to capture the view of key experts)

Influencing Factors
Define MAOD requirements
-Viability Analysis
-CAB Analysis
-….

MAOD Implementation Strategy Plan
-Benefits
-Shortfalls

INTEGRATION
As a team, bring together all inputs to develop the feasible solutions for MAWA

Deliverables

1

MAOD Feasibility Study

2

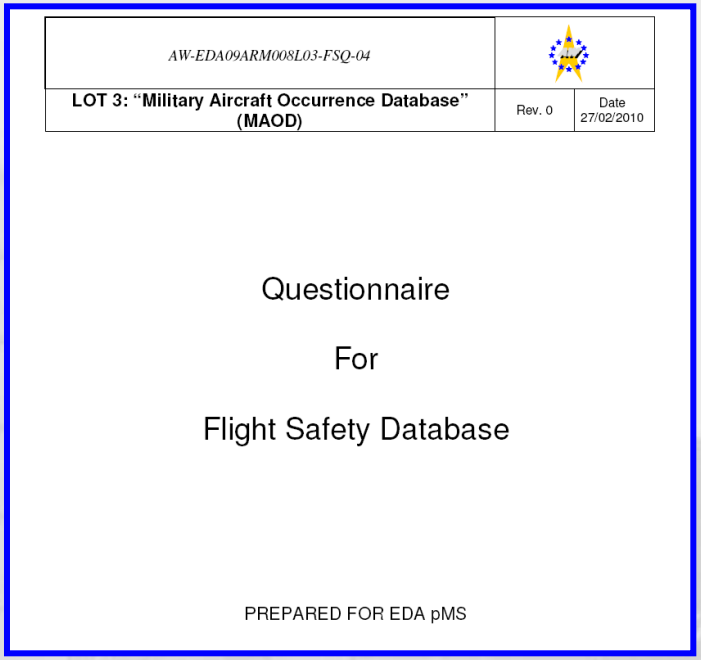
MAOD Demonstrator

DELIVERABLE D1

DGAA

Approach

- Analysis of existing European occurrence reporting system implemented by EASA through official documents.
- Interview/ questionnaire submitted to the **Military National Aviation Flight Safety Authorities** in order to delineate the current situation.
- **MAOD Basic structure** will be developed using as a reference EC 42/2003 implemented as necessary with "military delta requirements" extracted from questionnaire feedback.



AW-EDA09ARM008L03-FSQ-04		
LOT 3: "Military Aircraft Occurrence Database" (MAOD)	Rev. 0	Date 27/02/2010

Questionnaire

For

Flight Safety Database

PREPARED FOR EDA pMS

QUESTIONNAIRE RESULTS

- **16 pMS compiled the MAOD Questionnaire**

AUSTRIA

BELGIUM

BULGARIA

EDA

CZECH REPUBLIC

ESTONIA

FINLAND

FRANCE

GERMANY

GREECE

HUNGARY

ITALY

LATVIA

PORTUGAL

SLOVAKIA

SWEDEN

UNITED KINGDOM

Questionnaire Results

- All the pMS run an effective OR system, but each of them implemented their own regulatory.
- Reporting attitude is different, as shown by the rate of "reports per hour flown", that is expected to be similar, but is not.
- ATC data collection seemed to be not fully developed: many nations do not use it.
- Maintenance error data collection is implemented by most of the countries.
- Most of the nations issue at least a yearly report regarding data collected.
- The structure national Flight Safety organization appears very similar (*squadron-wing-central unit*).
- Most of the Countries are available to share data with EDA; anyway some of them clearly said "NO".

Perceived gaps and barriers

1. Different standardization among National Military Aviations regarding the Flight Safety
2. Different reporting attitude
3. Lack of ATC reports
4. Availability to communicate data such as flight hours, A/C data, mission flown
5. Language
6. Training of personnel to standard compiling and data handling
7. Lack of availability [or willingness] for cooperation between pMS

Preliminary feasibility study results

1. **The implementation of a MAOD is feasible within a realistic time scales, that can be estimated as early as four years from the start up.**

2. **To achieve effectively a full implementation of a MAOD is necessary to involve actively all the pMS, principally from which of them that have in place an ORS since a long time; they can be the trend setters, able to share their experience in Occurrence Reporting and promote, within the future EMJAAO, these concept to the other countries.**

DELIVERABLE D1

DGAA

Preliminary feasibility study reccomendations

1. **MAWA/EMJAAO should issue a set of recommended guidelines**
2. **Develop a standardised form for proper data collection**
3. **Set minimum requirements for organisation**

Squadron ⟹ Local Users (feeder)

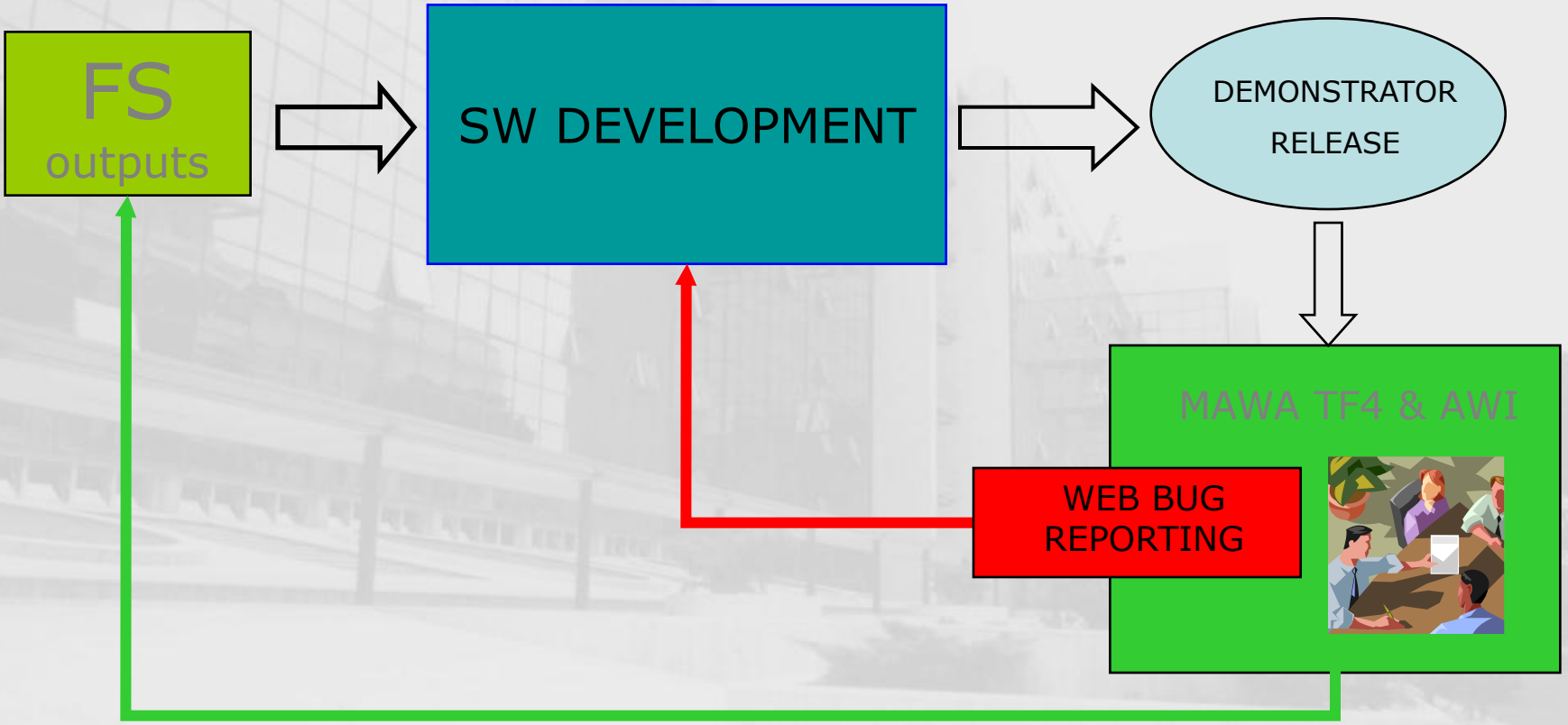
Wing ⟹ Flight Safety Officer (analyser)

Nation ⟹ Flight Safety Supervisor (national user)

DELIVERABLE D2

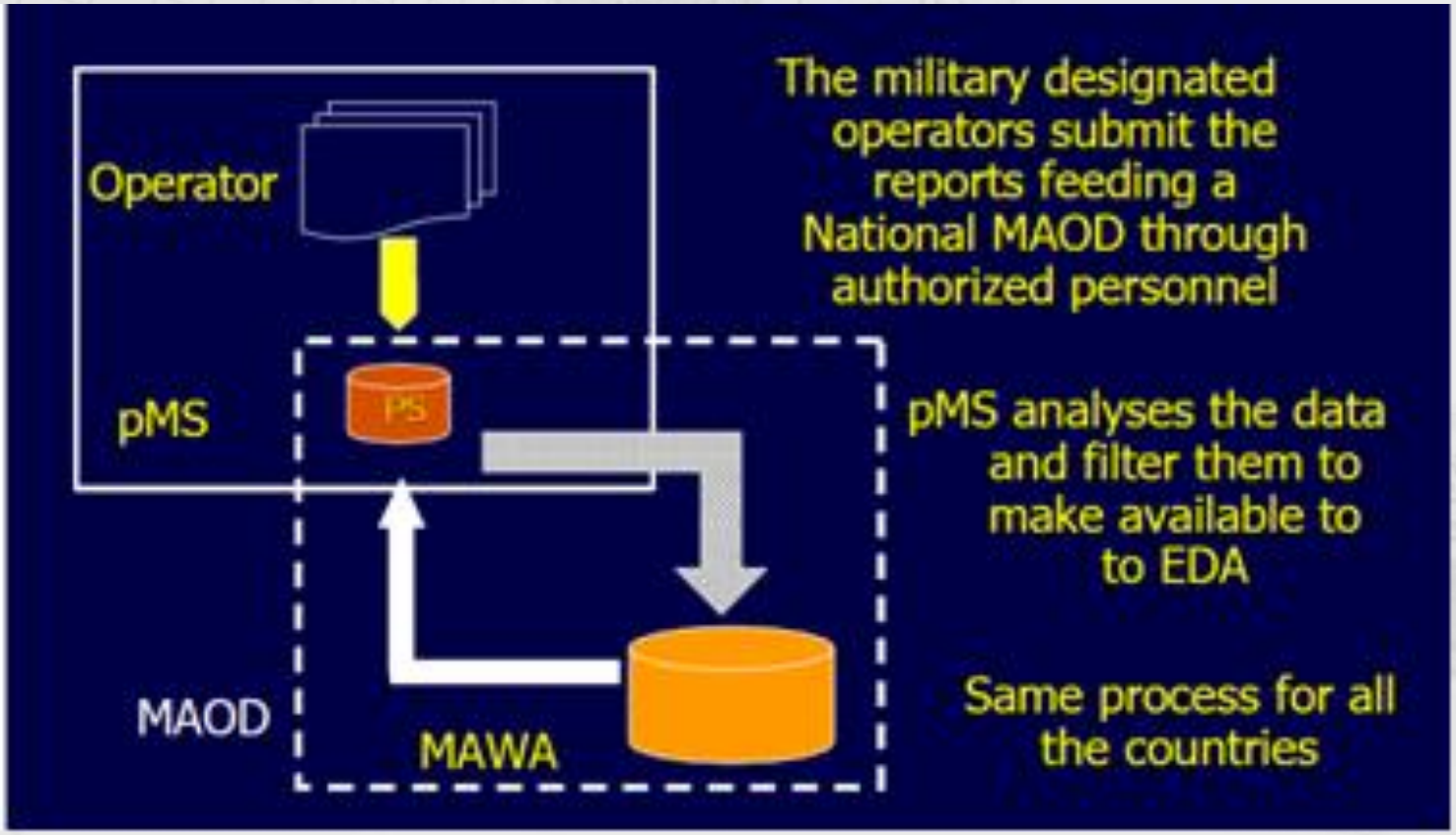
DGAA

Approach



DELIVERABLE D2

- **The MAOD demonstrator architecture will follow the following flow scheme:**



DELIVERABLE D2

A. The MAOD architecture will foresee a single database partitioned for each pMS, represented by a provisional storage (PS). This will allow pMS authority to select the data willing to be shared within the database authorized users only.

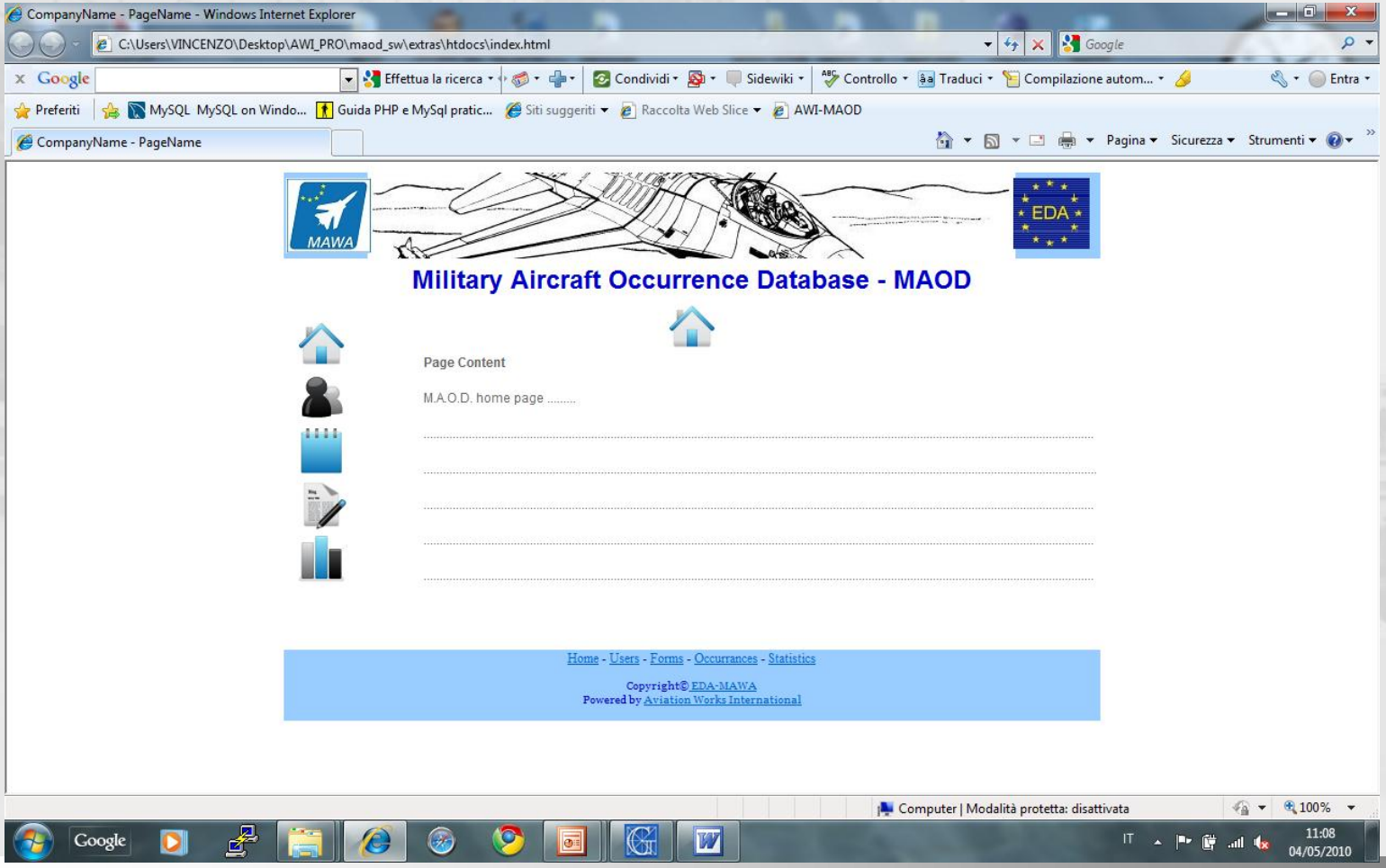
B. The MAOD database will cover three areas: 1) A/C technical defects/maintenance, 2) ground and navigation services and 3) Flight Ops.

C. The MAOD should be flexible and it was agreed that the starting point will address mainly the A/C technical defects/maintenance area.

DELIVERABLE D2

Current release is *alpha.3* and is available on line at

https://awi.vbelectronics.it/maod-alpha-3



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Brussels , 15 Sept 2010