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Institute for Research and Communication about Europe

*The Think Tank of European dynamics for an other vision of Europe*

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# WHICH ECONOMICAL MODELS FOR EUROPEAN MILITARY MRO ?

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## **I – MAPPING AND REALITIES :**

### ● I -1 : Europe of defence

- The forces
  - The hard core of major countries
  - The 28 Members
- The common and specific missions
  - Nations alone, in coalition, in multinational operations
- The needs and operational requirements
  - National aspects, overseas operations
- The national and international requirements
- The multicultural, political and financial issues
  - Choice of acquisition and or versus choice of maintenance ?
  - Economical choice and defence choice ?

### ● I – 2 : The realities of military MRO (Army, Airforce and Navy) in Europe and its evolution

- History about logistic and maintenance since the 18th century
  - Between public-private partnership and integration in armed forces
  - Success and failure stories during conflicts
- The different kinds of material and their configurations
  - Old, rustic, strong and upgraded
  - New, efficient, technical but fragile and dependant
- The differences between operational needs and overseas actions
  - Current management in peace to crisis management in war time
  - Overseas interventions brakes dues to budgetary aspects
- The national state actors
- The national and European private actors
- Public-private initiatives experiences
- The process and different intervention level and their management within the countries and for projected action
- The MRO structural models
  - Case of materials developed and used in only one country
  - Case of materials developed and used through cooperation
  - Case of materials bought « on the shelf »
  - NATO and OCCAR models
  - Innovative models, and impacts about costs, delays and performance
  - The common bases Army, Navy and Air Force
- The different models of contracts by types of materials and equipment
  - Usual and simple contracts
  - MCO contracts with period of time of utilisation
  - The optimum duration



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➤ After sale ou sale included, other



- **I – 3 : Jobs and Human resources consideration for Maintenance Repair and Overhaul**
  - Necessity of industrial flexibility with small series / production line
  - Concept of service / Concept of product
  - The adaptability of the workers
  - The economical options to repair or to change
    - The advantages of a cost reduced by 30% to 50%
    - The industrial risks
    - The risk of spare parts copy
  - The best technical and economical options for intervention
    - Scheduled visit or visit when failure
    - Contractual or « a la carte »,
    - Global or specific
  - The necessary intelligence between maintainers and manufacturers
    - Differences of capacities and know how between Maintenance & Repair companies on the one hand and Manufacturing on the other hand
    - Different jobs for the same quality
    - Advantages and risk to contract with an independent company from the Manufacturer (OEM), eventually to a group of Small & Medium companies with direct payment
    - The key or missing link of the permanent technical link and a financial fee to the manufacturer
  - The necessary understanding between companies and the customer for the higher capacity
    - The possibility, for industrial companies, to balance the lack of orders by an increase of the MRO
    - To war to be the closer with the customer for its satisfaction
    - The natural national link but why not a externalization ?
    - Risk and opportunities to contract in Europe, and outside of Europe, for each product
    - The limits of the game when the forces must go to war
    - The limits of the ethic of the armament contract
  - The key elements of the supply and value chain : the spare part and logistic
    - When equipment are often stocked by the industry and not on the bases. Does-it mean that (many choices possible) :
      - They don't manage the process with sub-contractors ?
      - They don't manage the process with final customer ?
      - They give preference to foreign customers because of margins ?
      - They give preference to foreign customers because of the state guarantees ?
    - Origin of industrial margins (several choices)
      - Made at different industrial levels
      - Made from final customer and shared between companies



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- Made from final customer and not shared between prime contractor and sub
    - The false costs increase
      - Can we really consider that it is really a “take off” of the MRO costs? How is it possible when the number of equipment is decreasing? Which are the real reasons and unsaid reasons? How can we solve it?
      - Realities, common points and differences about the economical models between overseas actions and national management
      - The difficult attitude of risk sharing, working with open book, with objective cost, contract with bonus or malus.
    - Psychological considerations : the military reluctance to use a second hand piece that belonged to an other one
    - The existing models
      - Particularity of the British process model
      - Particularity of the German cooperation model
      - Particularity of the mixed French model
      - Particularity of the US model
      - The other models (Eastern Europe, ...)
      - The preferred model in Europe
      - Is necessary to have only one model? Exercise of segmentation by consistent groups through Europe
  - **I – 4 : The global comparison between public and private MRO solutions**
    - Risk and advantage to give all or part of the MRO process to the private industry
    - Risk and advantage to externalize all or part of the logistic
    - Costs and timeframes for repair and overhaul
    - Adaptability to the lifetime of the equipement and small series
    - Adaptability to the configuration management
    - Reactivity and intervention performance
    - Productivity and quality
    - Safety, risk sharing and public service
    - Identity
  - **I – 5 : Connections with economical and organization theories**
    - Micro et macro economics approaches
    - Political and international approaches
    - Scale optimization (Arrow-...)
    - Borders of the firm and activity
    - The Nash balance
    - The Berne’s Theory of Organization



## **II – WAYS OF OPTIMIZATION**

### **● II – 1 : A global issue switched into a competitive advantage : to create a new opportunity of synergy for European defence industry et armed forces by common service and MRO**

- To be able and to learn to act together what ever the type of equipment and the battle field
- Use of « military industrial reservists » as a solution to solve the legal problem of civilian near the battlefield
- For the benefits of Europe but of other blocks of nations as well
- Valorization of the services more than only the product
- Level effect towards other domain of harmonization
- Best sharing and mutual consolidation of experiences
- Improvement of public-private experiences
- Creation of small factories with global know-how easily exportable oversea to limit the risk of logistic
- Setting-up of delivery agreement with customer states of European products to get spare parts near from the battlefield
- Consolidation of existing structures : OCCAR and European Defence Agency for manufacturing and after sale
- Improvement in taking advantage of and benefiting from NATO structures
- Creation of a « Buy European Act » for MRO
- Creation of country groups of coherence about habits, capacities and technical skills
- Restarting of the MAME (European Aeronautic Military Maintenance) club

### **● II – 2 : Operationnal and organisational considerations**

- Creation of Rapid Intervention Logistic Units
- Strategic and permanent Planting
- Optimization of the logistic flow
- Creation of a Centre of excellence for logistic simulation
- Commun training

### **● II – 3 : standardization considerations**

- Natural harmonisation to the benefice of the MRO
- Development of spare parts pools
- Development and valorisation of OCCAR role for after sale programme management and MRO promotion



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● **II – 4 : structures, process and contractualisation considerations**

- Research of a synergy among state owned « dépôts »
- Research of a synergy among private industry
- Creation of a European state/private cooperative hard core
- Creation of industrial platforms
- Global vision and controlled externalization
- Increase in financial and political support
- Re-ingeneering of working and operational levels
- Development of new customer relation management
- To give to MRO a better consideration at the beginning of manufacturing process
- Harmonization and efficiency of working level and process
- Research of segmentation and working group intra/extra Europe
- Development of a medium and long term technical and financial vision
- The solution of the unique Prime contractor
- Generalization of global after sale contrats
- Development of a better risk sharing policy
- How to solve the limit of leasing consideration in war time
- How to solve the problem of Equipement Insurance consideration in war time
- Development of a cost objectives policy
- Contratualization « a la carte » or « by hour »

● **II – 7 : Financial and economical profitability**

- Research about MRO cost reduction
  - Harmonization between peace and war time
  - To obtain cost without margin in war time
- Research about reduction of the development costs
- Adapted economical models : global versus partial vision of the iceberg of costs for a better supply chain management

● **II – 8 : National and European Research as a vector of facilitation**

- General considerations : synergy, exchange, return of experience, mutuality, rationalization
- Links with Horizon 2020, Eureka and European specific programs
- Links with National Research (competitvity poles and cluster)
- Academic Research in Management School and University
- Creation of the European agency for performance