



LOGISTIC SUPPORT FOR COMMON USED UAV's

Example: Drone CL-289

Prepared for:
UAV2002
14 June 2002

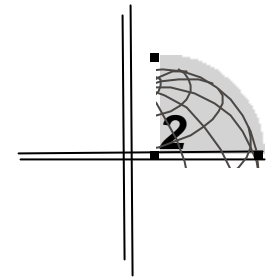
Presented by:
Peter Bockelmann
Chief Drone Technical Section
Rockets/Missiles Programme

Report Documentation Page

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NATO MAINTENANCE AND SUPPLY AGENCY

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North Atlantic Council

NAMSO
Board of Directors

NAMSA

Chartered in 1958

18 Member Nations

No Profit-No Loss

Oversight by BOD + IBAN

Weapon System Partnerships

Support Conferences

Common Funded Projects

Multi-Lateral Agreements

PROVIDE CO-OPERATIVE LOGISTICS SUPPORT

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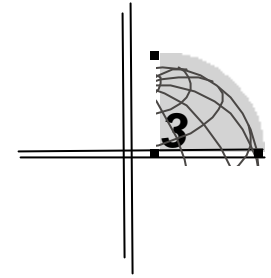
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NAMSA's Infrastructure



Budget:
EUR 50 Million



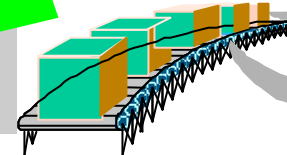
Co-operative Logistics:
NATO Logistics
Stock Exchange



Operational Logistics:
Troop and Infrastructure
Support

**Warehousing
and
Distribution:**
Luxembourg

Contracting:
Simple, Flexible
Procedures
Source File:
10,000 Suppliers



Taranto,
Italy

Workforce:
@910
Multi-National
and
Multi-Lingual



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Organic Maintenance:
Electro-Optical
Workshop;
Calibration Lab



Logistics Support:
Codification to
Disposal

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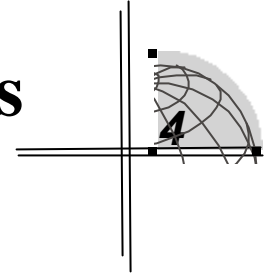
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Logistic Support for Common Used UAV's



Example:

Reconnaissance System Drone CL-289

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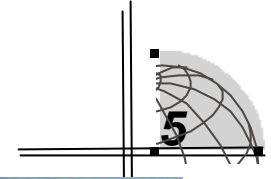
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Reconnaissance Drone CL-289



- UAV
- Air Speed 720 km/h
- Preprogrammed Flight
- Event Navigation; Combined Navigation System
AOLOS: up-dated by P/Y code GPS
- 2 Sensors (Optical Sensor, IRLS)
- 300 - 1200 m Altitude above Ground Level
- Data Link IRLS up to 75 km
- Recovery with a Parachute/Landing Bag System



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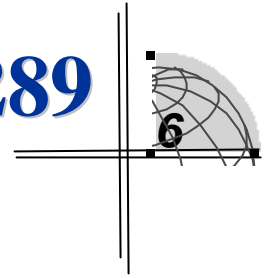
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Reconnaissance System Drone CL-289



The System includes

- **Drone including Sensors**



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Reconnaissance System Drone CL-289



The System includes

- Drones including Sensors
- **Launcher**



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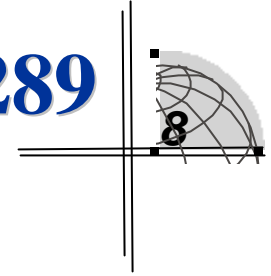
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Reconnaissance System Drone CL-289



The System includes

- Drones including Sensors
- Launcher
- **Homing Beacon**



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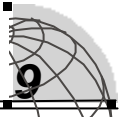
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Reconnaissance System Drone CL-289

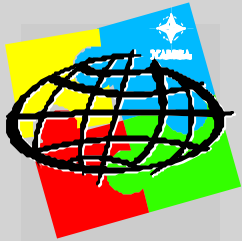


The System includes

- Drones including Sensors
- Launcher
- Homing Beacon
- **Maintenance Equipment**



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The System includes

- Drones including Sensors
- Launcher
- Homing Beacon
- Maintenance Equipment
- **Transportation Equipment**



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Reconnaissance System Drone CL-289



The System includes

- Drones including Sensors
- Launcher
- Homing Beacon
- Maintenance Equipment
- Transportation Equipment
- **Data Link Ground Station**



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Reconnaissance System Drone CL-289

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The System includes

- Drones including Sensors
- Launcher
- Homing Beacon
- Maintenance Equipment
- Transportation Equipment
- Data Link Ground Station
- **Film Processing System**



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The System includes

- Drones including Sensors
- Launcher
- Homing Beacon
- Maintenance Equipment
- Transportation Equipment
- Data Link Ground Station
- Film Processing System

Basic
System

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Reconnaissance System Drone CL-289

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The System includes

- Drones including Sensors
- Launcher
- Homing Beacon
- Maintenance Equipment
- Transportation Equipment
- Data Link Ground Station
- Film Processing System
- **Mission Planning Facility**

Basic
System



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Reconnaissance System Drone CL-289

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The System includes

- Drones including
- Launcher
- Homing Beacon
- Maintenance
- Transportation
- Data Link Ground Station
- Film Processing
- Mission Planning



- **Air Imagery Interpretation Facilities**

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Reconnaissance System Drone CL-289

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The System includes

- Drones including Sensors
- Launcher
- Homing Beacon
- Maintenance Equipment
- Transportation Equipment
- Data Link Ground Station
- Film Processing System
- **Mission Planning Facility**
- **Air Imagery Interpretation Facility**
- **HQ Facilities**

Basic
System



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Reconnaissance System Drone CL-289

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The System includes

- Drones including Sensors
- Launcher
- Homing Beacon
- Maintenance Equipment
- Transportation Equipment
- Data Link Ground Station
- Film Processing System
- Mission Planning Facility
- Air Imagery Interpretation Facilities
- HQ Facilities
- Storage Facilities

Basic
System

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Reconnaissance System Drone CL-289

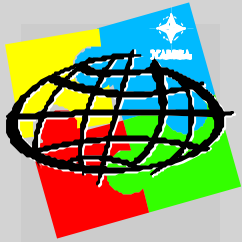
18

The System includes

- Drones including Sensors
- Launcher
- Homing Beacon
- Maintenance Equipment
- Transportation Equipment
- Data Link Ground Station
- Film Processing System
- Mission Planning Facility
- Air Imagery Interpretation Facilities
- HQ Facilities
- Storage Facilities
- Flight Surveillance Equipment

Basic
System

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Reconnaissance System Drone CL-289

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The System includes

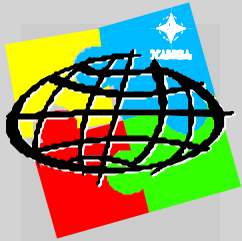
- Drones including Sensors
- Launcher
- Homing Beacon
- Maintenance Equipment
- Transportation Equipment
- Data Link Ground Station
- Film Processing System

Basic
System

- Mission Planning Facility
- Air Imagery Interpretation Facilities
- HQ Facilities
- Storage Facilities
- Flight Surveillance Equipment

National
Peripheral
Systems

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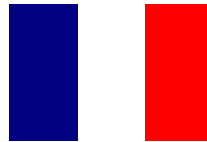
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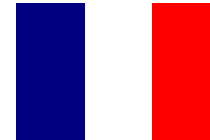
CL289 DRONE PARTNERSHIP

20

CL289 DRONE is an international weapon system developed and produced under a trilateral MOU



For the utilization a two nation partnership is in existence since 1987



Complete logistic support for the CL-289 DRONE basic system (common used equipment) by NAMSA .



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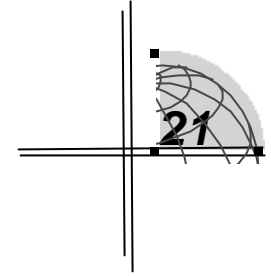
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NAMSA's MISSION



The Programme Rockets / Missiles (LM) provides
TAILOR MADE LOGISTIC SUPPORT Services
for Weapon System Partnerships,

consisting of :

- ENGINEERING SUPPORT
- SUPPLY SUPPORT
- MAINTENANCE SUPPORT

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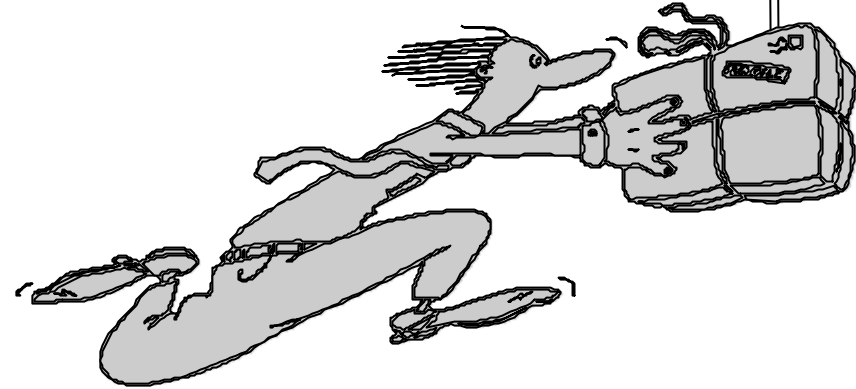
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SCOPE OF LOGISTIC SUPPORT

22

SUPPLY



- Procurement of Spares and Flight Consumerables
- Stockage and Brokerage Operations
- Mutual Emergency Support
- Management of Stocks (Central Stock, Stocks at Contractors)
- Redistribution of Stocks
- Production & Updating of Weapon System Stockage Lists
- Purification of Stocks
- Disposition - Disposal of Stocks

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SCOPE OF LOGISTIC SUPPORT

23

MAINTENANCE

- **Weapon System Repair & Overhaul**
- **Electronic & Mechanical Component Repair & Overhaul**
- **Weapon System Inspection**
- **Modification Application**
- **Calibration**
- **Production Warranty Repair**
- **On-site Support**



performed as contractual
maintenance at industry

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SCOPE OF LOGISTIC SUPPORT

24

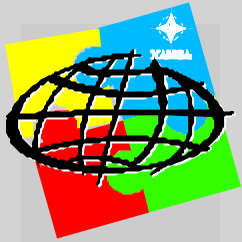
ENGINEERING

- **Weapon System Engineering Support**
- **Configuration Management**
- **Software Management**
- **Technical Documentation Support**
- **Technical Data Package Support**
- **Failure Data Collection and Evaluation**
- **Modification/Retrofit Management**
- **Re-sourcing of Obsolete Sub-Assemblies**
- **Assistance to Customer & Contractors**
- **Technical Studies & Training**
- **EDP Supported Customer Information System**



with support of industry

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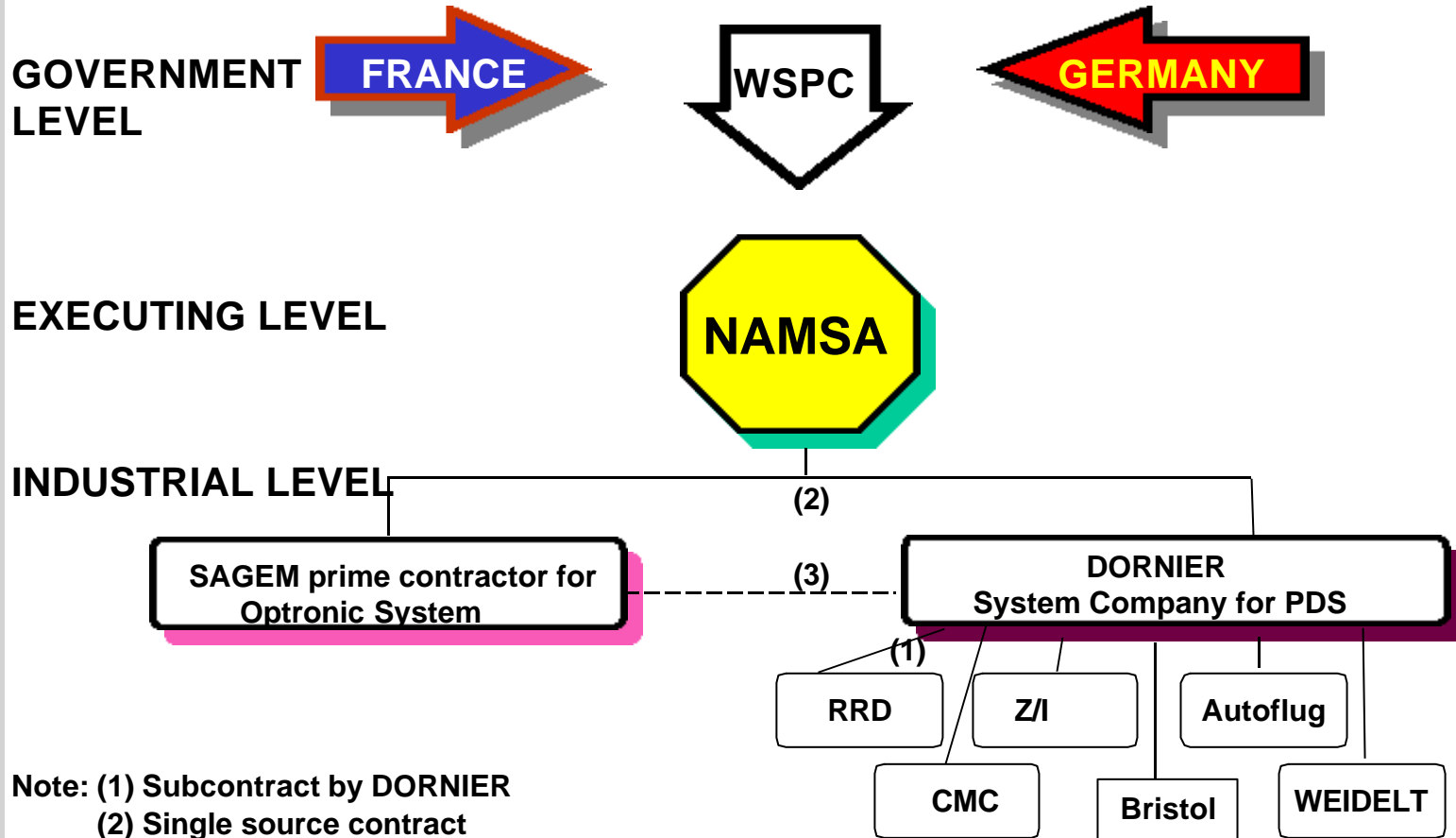
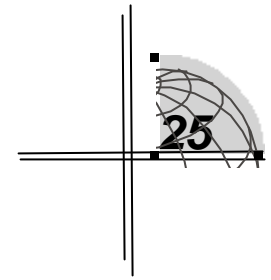
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System Company Concept for PDS



Note: (1) Subcontract by DORNIER
 (2) Single source contract
 (3) Co-operation agreement

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SCOPE OF LOGISTIC SUPPORT

26

Configuration Management

All configuration changes

- hardware and software –
have to be agreed by the

Drone Configuration Control Board (DCCB)

consisting of the partnership countries
and NAMSA as a non-voting member

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Reconnaissance System Drone CL-289

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Use in Operations

French and German Drone System were deployed in
Bosnia and Macedonia.

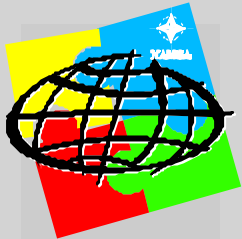
Missions: IFOR, SFOR, KFOR

About 600 flights were performed.

KFOR: 80% of the Air Imageries came from Drone

NAMSA supported with rapid procurement of spares,
flight consumables and additional equipment as well
as prioritised maintenance.

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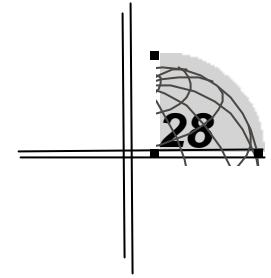
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Other NAMSA Services



SHARE

BETTER UTILIZE EXISTING STOCK

COMMIT

BETTER MANAGE STOCK

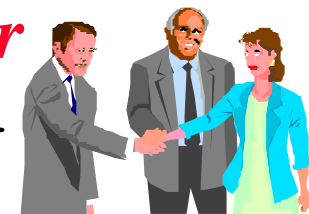
PROFIT

BETTER PROVISION STOCK

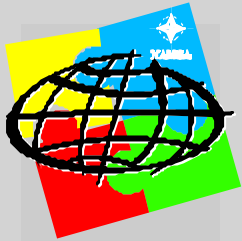
**Problem
Solutions**



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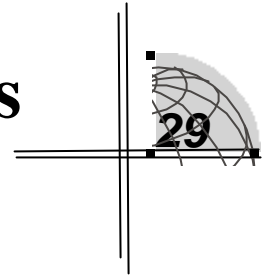
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Logistic Support for Common Used UAV's



General Statements

Utilisation takes longer than expected during procurement or development!

Utilisation is always more expensive than expected during procurement!

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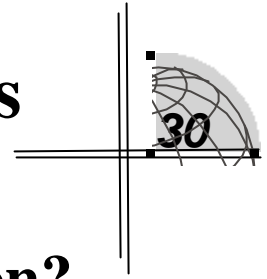
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Logistic Support for Common Used UAV's



Do you have plenty of money for the utilisation?

Have your services the ability to support your UAV?

Do you have strong, guaranteed industrial support for the utilisation?

If you can answer these questions with „YES“

You don't need NAMSA

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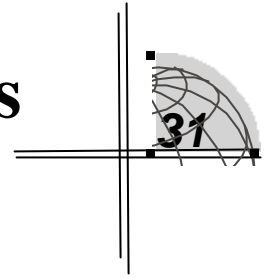
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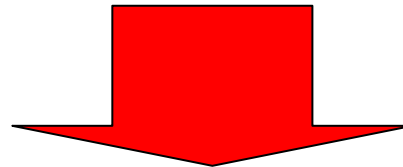
Logistic Support for Common Used UAV's



But

What is the situation in the field of defense today?

- Decreasing defense budgets
- Limited resources
- Services decreasing by quantity
- Concentration in the services on core abilities
- Less capacity in the defence industry in Europe



Saving resources is more important than ever!

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Logistic Support for Common Used UAV's

Common Used UAV's (examples)

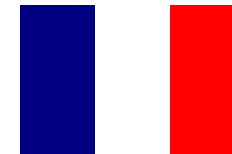


Same family

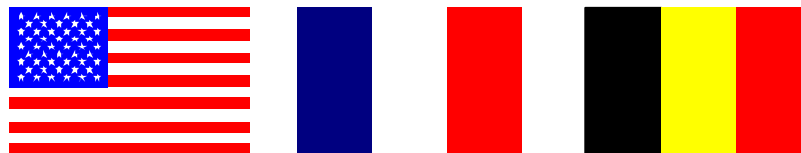


SPERWER/UGGLAN

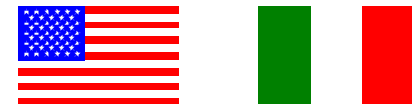
CRECERELLE



Hunter



Predator



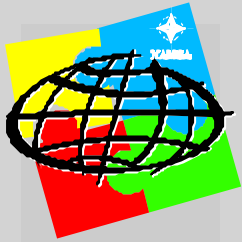
Other Equipment:

Ground Stations

Data Link Systems

Sensors

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Logistic Support for Common Used UAV's

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What is the benefit of common logistics?

Common procurement, maintenance and services:

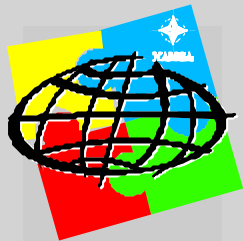
Higher quantity  **better prices**

Less manpower necessary!

If industry cannot support:

NAMSA has a workshop with electronics, optics and mechanical groups.

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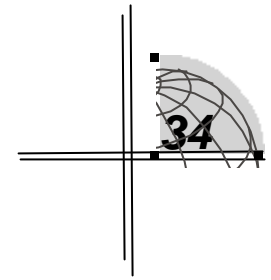
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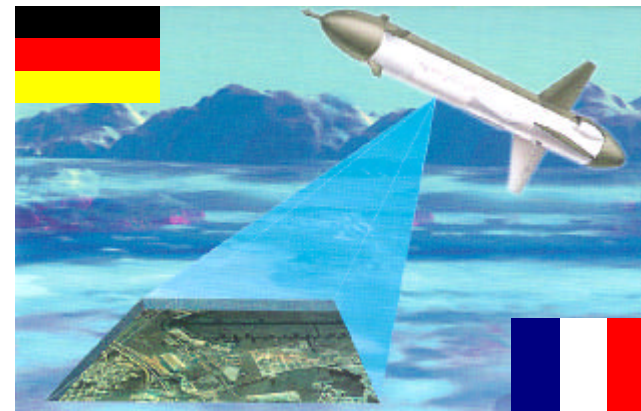
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SUMMARY



For the
Reconnaissance System Drone CL-289
NAMSA is providing a complete
logistic service with maintenance,
supply and engineering support



The Drone customers get support from a
professional team and the savings from an
active Weapon System Partnership.

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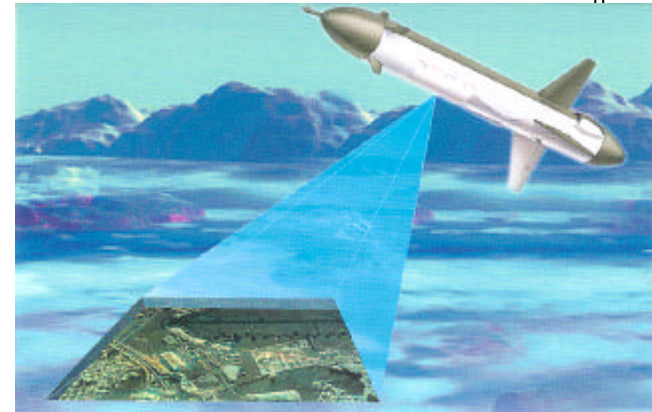
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Logistic Support for Common Used UAV's

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It does not matter which system YOU are using!

**NAMSA can offer YOU the logistic support
from a professional team too!**

