

1500+ people practice with excellent references

**Product Related
 (embedded) Software &
 Telematics**

DAIMLER
 In-Car Internet Services like Weather, Diagnosis, Google send-to-car. Integration into the Head Unit and complete infrastructure and application operation.

Panasonic
 Full responsibility for the development of the telephony and Bluetooth application for a vehicle head unit.

AIRBUS
 Design for air / ground communications computer incl. OS and drivers, protocol layers, self-test mechanism. Preparation of final device certification for A350.

SIEMENS
 Implementation of embedded SW for E-Vehicle Charging Spots. Management of complete SW development according to functional requirements.

Gigaset
 Structured identification, bundling and management of requirements for WIMAX product suite. Feature and release planning.

Atosengineering
 services for industry challenges
aeronautics, space, defense, automotive, railway, energy..

**1500+ people, 80 M€ revenue
 20+ years track record**

- ▶ Safety
- ▶ Reliability
- ▶ Regulatory Requirements
- ▶ Specific HW and equipment
- ▶ Integrated Systems
- ▶ R&D Customers

**Critical Systems
 (Command & Control)**

EDF
 Development and deployment of the level 2 Control and Command systems for most of the French nuclear plant.

SNCF
 Design and development of a generic control-command solution for rail traffic management. Solution gradually deployed in 20 regional control centers.

CNES
 Directly involved in the Operation of control systems for Satellite programs (ATV)

DCNS
 Development of the Combat Management System for the last generation of nuclear powered submarines.

**Mechanical Engineering
 (CAD, Simulation)**

AIRBUS
AN AIRBUS COMPANY
 Atos is one of the Airbus tier 1 supplier for Engineering Services. We deliver full design and analysis of aircraft fuselage sections, from conceptual design up to certification
 Development of Stress methodology for all Airbus family

ASTRIUM
AN AIRBUS COMPANY
 Atos is one of the Astrium tier 1 supplier for Engineering Services. We deliver sizing, design, test prediction and correlation projects of space structures
 Satellites and space probes bodies, antennas, launchers sections

SEAT
 Atos is selected as Preferred Engineering partner for SEAT, delivering sizing of complete bodywork parts
 Crash simulation, thermal analysis, static non linear analysis

Explicit industry knowledge in all industrial sectors



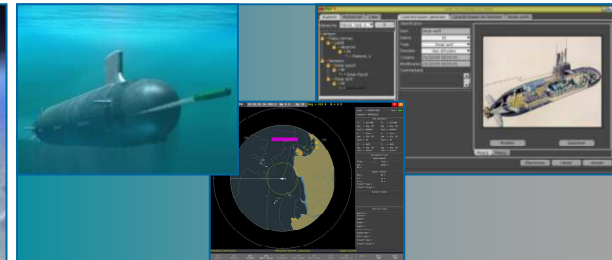
Aeronautics

Software for Avionics, Open World Systems, Air traffic Management



Space

Launcher and satellite sizing & test qualifications, flight dynamics, test bed & simulation tools, Operations / control space vehicles and satellites



Defense

Software for components of combat systems for submarines, ships night vision systems & acoustics imaging systems



Automotive

Embedded Software, Electro Mobility, Connected Vehicle



Energy & Utility

Control and Command Centers for Nuclear Plant and Water Treatment Plant



Transportation / Rail

Control and Command Centers

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ensures VAR1 : \result == OK || \result == KO;
ensures VAR2 : P_Panne.index == NO_ERROR || P_Panne.index == ERR_1 || P_Panne.in
ensures LOG01a : _VerifieSortie_p1[0] == EP_1;
ensures LOG01b : _VerifieSortie_p1[1] == EP_2;
ensures ALGO01e : !_AttendreDelai_p1[0] == DELAI_TRANS;
ensures ALGO01c_Ko : !_AttendreDelai_p1[0] == 33;

behavior COND_FCT_OK:
  assumes !_VerifieSortie_out[0] == OK;
  assumes !_VerifieSortie_out[1] == OK;
  ensures RES1a : \result == OK;
  ensures RES2a : P_Panne.index == NO_ERROR;
  ensures RES3a : P_Panne.desc1 == 0;
behavior COND_ERR_1:
  assumes !_VerifieSortie_out[0] != OK;
  assumes !_VerifieSortie_out[0] == KO;
  ensures index == ERR_1;
  
```

Astrée (



Caveat()

Fluctuat()

CompCert()



Les méthodes formelles sont une rupture technologique dans le processus industriel.

Afin d'en tirer profit, il est important de savoir instancier ces techniques dans de nouveaux processus de développement.

Que ce soit pour des utilisations internes ou pour de grands comptes industriels.

C'est en cela que Atos s'investit, afin de faciliter l'application et la diffusion des méthodes formelles

