SERVICES

# ADALOG

## EXPERTISE IN ADA

Ada
Time-tested, safe and secure

### The Company

**ADALOG is a company specialized in expertise, consulting, and training related to the Ada langage, design methods, and software engineering in general.**

ADALOG was founded in 1985 by Jean-Pierre Rosen, an reknown expert of the Ada langage and object oriented techniques. He has been teaching Ada since 1980; his extended knowledge of the langage coupled with famous pedagogical skills make ADALOG training sessions uniquely efficient.

**ADALOG operates in all domains connected to the Ada language:**

- ***Expertise***: code reviews, problem analysis, assistance to certification (DO178-B/C, EN50128), tooling.
- ***Consultancy***: Support to developpement, coding standards, quality assesment.
- ***Training***: from the overall overview of the langage to the most specific domains: real-time, numerics, AWS, ASIS...
- ***Validation***: ADALOG is an ACAL (*Ada Compiler Assertion Laboratory*, an official laboratory for the validation of Ada compilers).

ADALOG has no connection to makers or vendors of compilers and tools: this guarantees total freedom and provider independance in our expertise and advices.

### The Ada Language

Ada is a programming langage which is the ultimate achievement in the line of "classical" (imperative, procedural) languages. It is mainly the outcome of a synthesis effort of all the best elements of previous programming langages, integrated into a consistent framework.

Its successive standards, up to the recent **Ada 2012**, follow the evolving needs of computer science by incorporating the most recent advances: **object oriented programming**, interfaces, **programming by contract**, support of **multi-core** architectures… It has been succesfully used in such various domains as real-time, finances, CAD, health devices, langage processing...

Ada was designed after a set of **requirements**, whose leading idea was to **reduce the cost of software** development, by considering all aspects of the life-cycle. The langage is thus built around some strong main lines:

- ➔ **Favour ease of maintenance over ease of writing**, because maintenance represents nearly 2/3 of software costs.
- ➔ **Provide an extremly rigorous type control system**, allowing detection of errors as early as possible.
- ➔ **Allow an intrinsically safe programming style**, by permitting the software to handle all abnormal situations.
- ➔ **Be portable between machines with various architectures**, in order to make software independent from hardware vendors.
- ➔ **Permit efficient implementations and provide access to low level interfaces**, features that are required when designing embedded, real-time, and safety-critical systems.

ADA LOG

Adalog, membre du groupe Pacte-Novation

Pacte Novation

# SERVICES

## CONSULTANCY AND ASSISTANCE

## Consultancy

### Better Use of the Language

ADALOG can step in anytime to **help** teams facing a special difficulty in using Ada, or to **advise** and **help make choices** concerning best use of the various functionalities of the language.

### Coding Standard

A good set of coding rules is expected to be efficient and effectively contribute to enhancing the overall quality of software. This goal is not easy to achieve.

Thanks to the success of the **AdaControl tool**, ADALOG has acquired a great experience in establishing coding standards and in designing effective user guides.

### Design and Project Monitoring

The success of a project depends largely on choosing an appopriate structure, and on identifying the right objects to start from, with the support of adequate methodological and langage tools. Setting up a policy for managing the dependence graph, for using tasking, and for handling errors are also important factors.

ADALOG can provide **support** and **advices** during the preliminary design phase, as well as **monitoring the project** to ensure an correct starting point, check the good usage of object oriented methods (OOD, HOOD) and ensure an optimal use of the Ada langage during the coding phase.

## Tutoring

When a programming team has followed a training session in Ada, it is not yet able to start a project on its own. Tutoring helps "filling the gap" between initial training and obtaining a fully operational and self-standing team.

Practically, it is an assistance for starting projects, together with pedagogical support. By explaining the reasons that lead to the solution, the tutor brings a "cultural background" that will later allow the team to work by itself. He is always available to switch to a technical course when he diagnoses a lack of understanding on some langage points.

## Developments

ADALOG can handle all **software developments** on fixed price basis, in Ada or using connected techniques.

ADALOG can develop custom **software components** on demand.

## Adassistance

Do you need a helping hand for your Ada developments? For a fixed fee, ADALOG offers the **Adassistance contract** :

- Two days of **on-site consulting** to get acquainted to your project and conduct a design review.
- One year of **Ada hot-line** to answer all your questions.
- **Reduced rate** for extra consulting services.

And if you intend to move to Ada 2005/2012, it is the best way to build rapidly your new know-how.

## Technical Assistance

In cooperation with its associate NOVASYS Ingénierie, ADALOG can provide **engineers specialists in Ada**.

The persons provided by ADALOG have been **assessed** technically by ADALOG, and most of them have followed ADALOG's training sessions. In case of difficulties, they benefit from the support and advices of J-P. Rosen.

## Studies and Expertise

**Studies**, **expertise**, **audit** and **consulting** missions can be accomplished in the following domains:

- Ada Language (help in using the functionnalities of the langage, code reviews, quality insurance).
- Coding rules (development of guidelines, automatic checking)
- Object oriented design (design reviews, project auditing).
- Quality control (design, development, code reviews).
- Design tools and compilers evaluation.
- Setting up training plans and migrations strategies to Ada and object oriented design.
- Setting up a reuse policy and organising a base of reusable software components.
- Other methodology oriented programming languages.
- Operating systems, Real-Time, Compilation technics.

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