

Roadmap for AROME operational deployment

The only 2 hypotheses used here are :

- The operational ALADIN versions run in 2004 are a good reference for what can be achieved now by all the partners
- The computing resources will continue to evolve approximately following Moore's law: x2 in 18 months, or x10 in 5 years, x30 in 7 years, x300 in 12 years

The figures are based on the current cost ratio AROME-ALADIN (AROME 300 times more expensive than ALADIN-10 on the same domain for the same forecast time).

Different typical configurations are discussed. However it exists an infinity of intermediate solutions, and partners may choose such intermediate versions according to their needs and computational capabilities. The typical configurations only help to figure out what are the computing requirements associated with AROME.

Typical configuration V1

- (in Toulouse) ARPEGE : 15 km resolution over Europe, 4/day, 60-96h
- ALARO : 7-10 km, same domain as ALADIN in 2004, 4/day, 48-60h
- AROME : 3 km, reduced domain, 4/day 24h

This costs approximately 30 times more than a typical 2004 ALADIN-10 km version, or 10 times more than a ALADIN-7km version on a "full" domain.

Depending on their computing resource evolution and on real case-by-case domain reduction opportunities, partners will be able to jump to this V1 between 2008 (more advanced ones) and 2013 (less advanced ones)

Typical configuration V1-bis:

Same as V1 plus a nowcasting-oriented configuration:

- AROME : 3 km, reduced domain, 24/day, 3h

The whole V1-bis configuration is about twice as expensive as V1

Typical configuration V2

- (in Toulouse) ARPEGE : 10 km resolution over Europe, 4/day, 60-96h
- AROME : 3 km, full domain, 4/day 48h

This costs approximately 300 times more than a typical 2004 ALADIN-10 km version, or 100 times more than a ALADIN-7km version.

Partners will be able to go to version 2 between 2012 and 2018

Typical configuration V0

Partners who are not able to run V1 in 2008 may decide to implement an AROME-substitute of the current dynamical adaptation versions initiated by Slovenia and currently run by several partners.

- AROME : 3 km, reduced domain, 1/2h integration around lead times 3h, 6h, 9h, 12h, 15h, 18h, 21h, 24h, 30h, 36h, 42h, 48h (equivalent to a 6h forecast)

This costs approximately 4 times more than a typical 2004 ALADIN-10 km version, and half of an ALADIN-7 km version on a "full" domain.