Part VII: Faces of Reuse
ROSE-ADA : 
a Method and a Tool to Help Reuse of Ada Codes

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Abstract :
We present in this paper a method and a tool to help retrieval and adaptation of Ada
reusable components. Starting from a goal specification, expressed as a hierarchy of
Ada package specifications, a base of reusable components is filtered in order to extract
the components which correspond to the goal specification, modulo a renaming and the
addition of some subprograms. The filtering method is based on a pattern matching on
the profile of the subprograms. Once a component is selected, the renaming is built by the
system with a little help from the user when there are some ambiguities. After that the
adapted code is automatically built by encapsulating the code of the reused components
into a set of packages, which behave exactly like the goal specification. The code of the
reused components is absolutely not modified; this allows to keep the quality level of the
reused code and to factorize the maintenance.
This tool, which was never intended to be a complete reuse environment, is integrated
into the ESF-ROSE reuse system.

Key-words :
software reuse, software adaptation, software components retrieval, Ada, ESF-ROSE.

Introduction
Software reusability is a topic of first practical importance and of great practical
difficulty. It has been recognized as such for a long time, since the first subroutine
libraries. More recently, this problem has been addressed in term of reuse of some
development steps [BR87, CHSW89], mainly design (as in [Wir88], [CCJ+91]
among others), as well as in term of reuse of code. It seems obvious that these
two approaches are complementary and that they correspond to different aims. In
this paper, we discuss the second approach that we call as-it-is reuse : the aim is
to identify possible reuses such that there is no need to modify the reused code.
When it is possible, as-it-is reuse is especially interesting since the absence of

1This work was funded by the Eurêka Software Factory project.