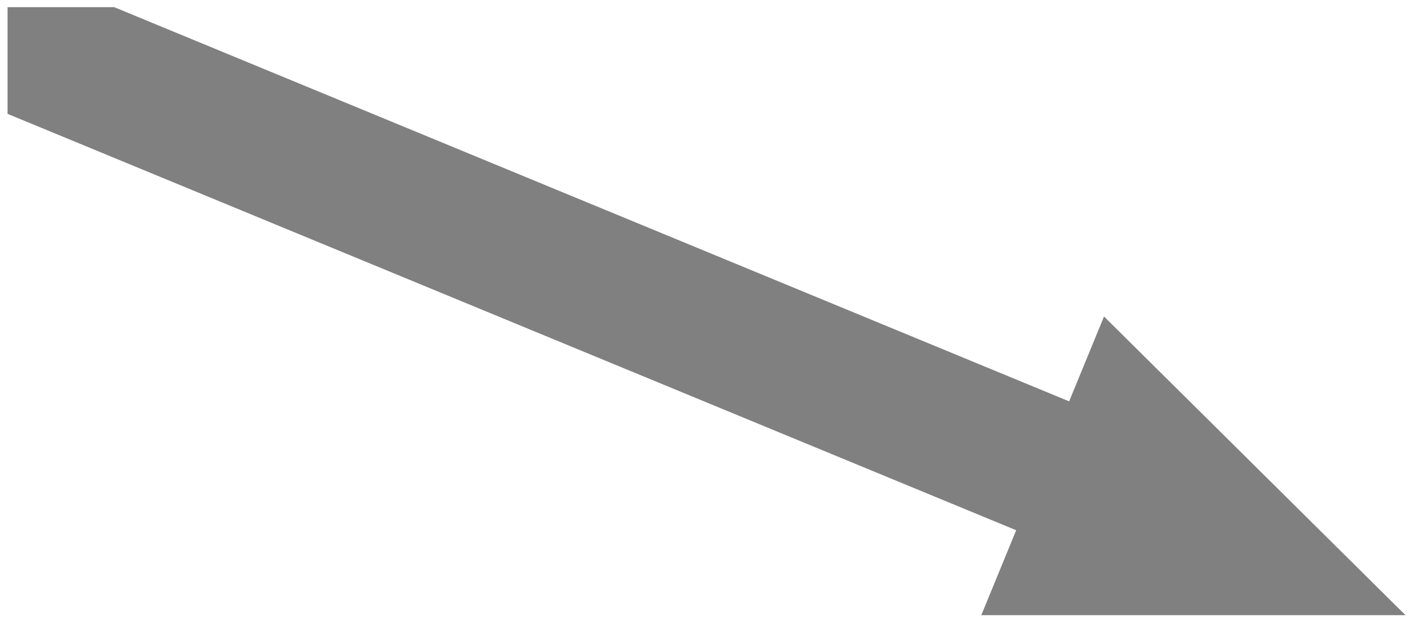
CONSTRAINT



HIERARCHY

A PLUG-IN

SOLVERS

ARCHITECTURE

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We propose a general plug-in architecture of constraint hierarchy solvers here. It is a modular architecture based on the notion of an extendible meta-interpreter. The proposed structure divides a system embracing constraint hierarchies into four independent parts: a meta-interpreter (core programm), a general hierarchy solver, a comparator module and, finally, a flat constraint solver. These parts communicate through exactly defined interface or, more precisely, each part provides a set of services to other components. The proposed architecture allows one to construct various systems expoiting constraint hierarchies from standardized modules.

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LOAD AND TEST

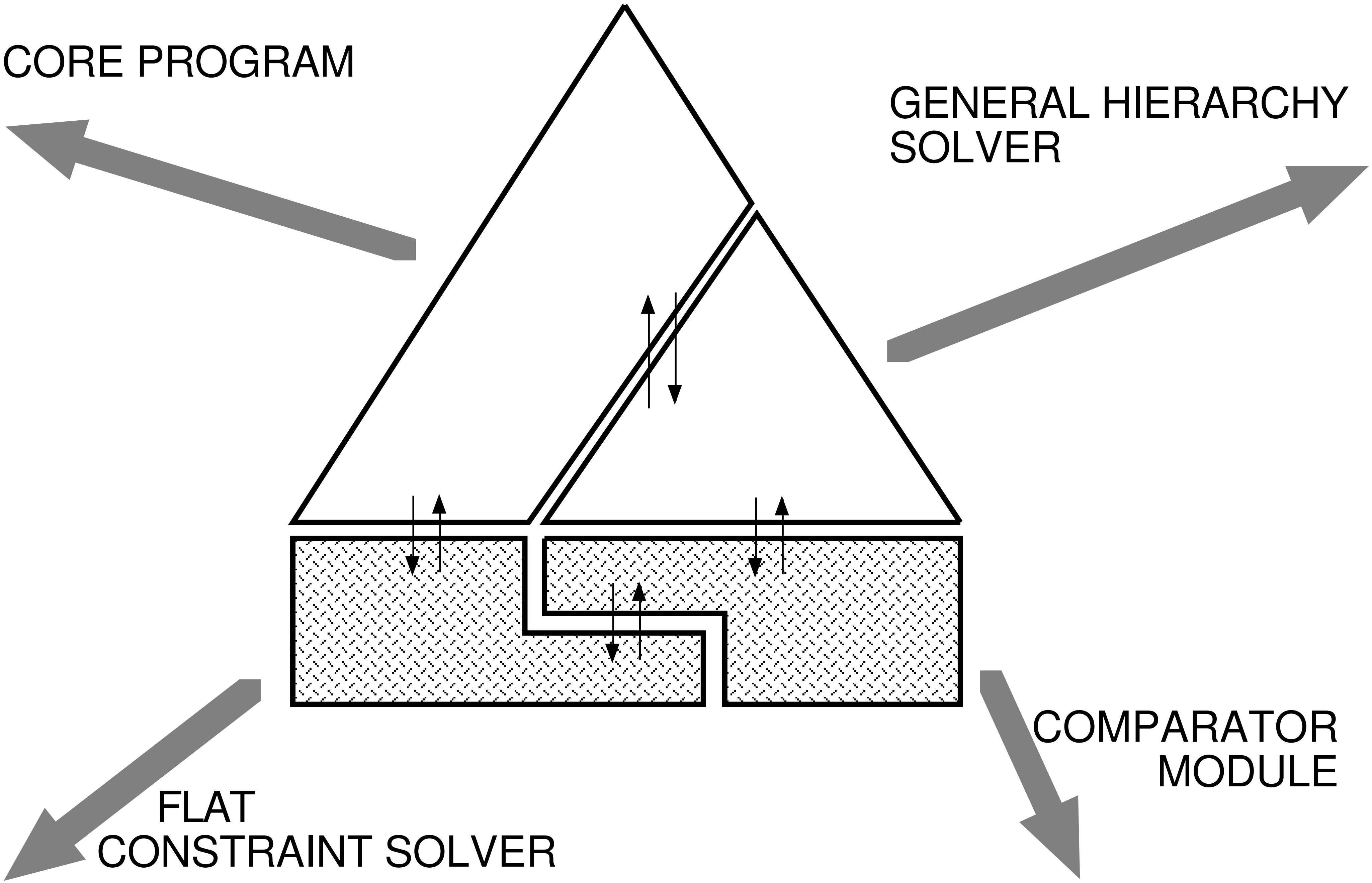
The PROLOG source code of all below mentioned modules as well as other interesting programs and related papers are available on-line at URL

`http://kti.ms.mff.cuni.cz/~bartak/`

So, load, test and notify me…

KERNEL:
A CORE PROGRAM

- program that exploits constraint hierarchies
- in case of HCLP it could be a meta-intepreter
- calls the flat constraint solver for solving flat constraints and the hierarchy solver for solving constraints labeled with a preference


CORE PROGRAM
GENERAL HIERARCHY SOLVER
FLAT CONSTRAINT SOLVER
COMPARATOR MODULE

KERNEL:
A GENERAL CONSTRAINT HIERARCHY SOLVER

- a generalized system for solving constraint hierarchies
- independent of comparator
- independent of constraint domain

PLUG-IN:
A FLAT CONSTRAINT SOLVER

- library of functions for solving constraints
- solves flat constraints over chosen domain
- independent on the hierarchy solver

PLUG-IN:
A COMPARATOR MODULE

- plug-in module for generalized hierarchy solver
- implements chosen comparator
- bridge between the general hierarchy solver

  and the flat constraint solver

A FURTHER DEVELOPMENT

- a hierarchy solver based on generalized local propagation
- a general hierarchy solver as a library of functions/services

Barták, R., A Generalized Framework for Constraint Planning, submitted to CP97

Barták, R., A Generalized Algorithm for Solving Constraint Hierarchies, accepted as poster to JFPLC97