

# Prototype A1

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## 1 Introduction

The aim of this document is to describe the structure and features of a fully functional prototype for the Erlang concurrency testing tool that we intend to develop. Our rationale is to use this prototype (PRA1) to gain insight into the inner workings of our main project and detect potential pitfalls as early as possible.

In the following sections we present the subset of functionality that we shall implement in PRA1, as well as an overview of its architecture (which possibly forms a structural preview for our main project).

## 2 Functionality

Being the very first prototype, PRA1 shall only implement a core subset of the overall functionality. Specifically, we shall consider the following Erlang "constructs" for now:

- The **spawn**/1 BIF
- The send (!) expression, i.e. `Expr1 ! Expr2`
- The simple **receive** expression (not containing an **after** clause), i.e.

```
receive  
Pattern1 [when GuardSeq1] ->  
    Body1;  
...;  
PatternN [when GuardSeqN] ->  
    BodyN  
end
```

The current implementation viewed as a black box, shall accept a single erlang module for analysis and output a log text file, containing all possible schedules w.r.t. the aforementioned "constructs".

## 3 Structure

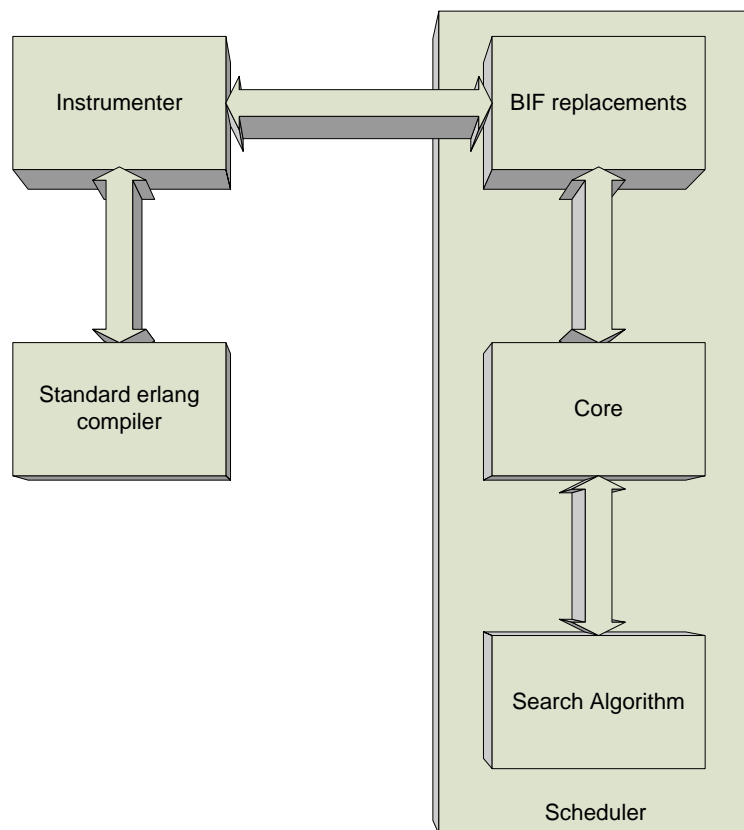


Figure 1: Module structure and interaction