

# Technical report

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## 1 Semantics

### 1.1 pWhile

Defined for some context  $\{\text{ident} : \text{eqType}\} \{\text{mem} : \text{memType ident}\}$ . We have:

```
cmd := abort
      | skip
      | assign {t} name expr
      | random {t} distr
      | cond boolexp cmd cmd
      | while expr cmd
      | seqc cmd cmd
```

$(\text{expr} : T) := \text{var } \{T\} \text{ vars}$	expr T
cst {T} value	expr T
prp m	expr bool
app {T U} (expr : T $\rightarrow$ U) (expr : T)	expr U

```
vars  $\subseteq \Sigma^*$ 
value  $\in V$ 
```

### 1.2 Rml

```
vars  $\in \mathbb{N}$ 
value  $\in V$ 
```

## 2 Translation

Example translation:

`if (4 > 2) then 1 else 0`

`if (> 4 2) then 1 else 0`

Another example

`x := 3 ; x`

`let x := 3 in x`