



Degree Project in Technology

First cycle, 15 credits

# **This is the title in the language of the thesis**

A subtitle in the language of the thesis

**FAKE A. STUDENT**

**FAKE B. STUDENT**



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FAKE B. STUDENT

Bachelor's Programme in Information and Communication Technology

Date: January 25, 2024

Supervisors: A. Busy Supervisor, Another Busy Supervisor, Third Busy Supervisor

Examiner: Gerald Q. Maguire Jr.

School of Electrical Engineering and Computer Science

Host company: Företaget AB

Swedish title: Detta är den svenska översättningen av titeln

Swedish subtitle: Detta är den svenska översättningen av undertiteln



## 0.1 Inference Rules

T-TASK	$\frac{x : C; ocap \vdash t : \tau \quad \Gamma; a \vdash b : Q \triangleright Box[C]}{\Gamma; a \vdash task(b)\{x \Rightarrow t\} : Q \triangleright Task[C]}$
T-ASYNC	$\frac{Perm[Q] \in \Gamma \quad \Gamma \setminus Perm[Q]; a \vdash s : \sigma \quad \Gamma; a \vdash x : Q \triangleright Task[C]}{\Gamma; a \vdash async(x)\{s\} : \perp}$
T-FINISH	$\frac{\Gamma; a \vdash t : \tau}{\Gamma; a \vdash finish\{t\} : null}$
E-TASK	$\frac{L(b') = b(o, p) \quad H, \{(f, \langle L, \quad let x = task(b')\{x \Rightarrow t\} in s, P \rangle^l)\} \uplus TS}{\rightsquigarrow H, \{(f, \langle L[x \rightarrow task(b(o, p), t)], s, \quad P \rangle^l)\} \uplus TS}$
E-ASYNC	$\frac{L(y) = task(b(o, p), t) \quad p \in P \quad T_1 = (f, \langle L, s, P \rangle^\epsilon) \quad T_2 = (f, \langle [x \rightarrow o], t, \emptyset \rangle^\epsilon)}{H, \{(f, \langle L, async(y)\{s\}, P \rangle^l \circ FS)\} \uplus TS \rightsquigarrow H, \{T_1, T_2\} \uplus TS}$
E-FINISH1	$\frac{T = (f', \langle L, t, P \rangle^\epsilon) \quad f' fresh}{H, \{(f, \langle L, let x = finish\{t\} in s, P \rangle^l \circ FS)\} \uplus TS \rightsquigarrow H, \{(f, \langle FINISH f' \rangle \circ \langle L[x \rightarrow null], s, P \rangle^l \circ FS)\} \uplus \{T\} \uplus TS}$
E-FINISH2	$\frac{\nexists(f', FS) \in TS}{H, \{(f, \langle FINISH f' \rangle \circ FS)\} \uplus TS \rightsquigarrow H, \{(f, FS)\} \uplus TS}$
E-TASK-DONE	$\frac{}{H, \epsilon \uplus TS \rightsquigarrow TS}$