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1 conops0Solution Theory

Built: 21 March 2019
Parent Theories: aclDrules

1.1 Datatypes

commands = go | nogo | launch | abort | activate | stand_down

keyPrinc = Staff people | Role roles | Ap num

people = Alice | Bob

principals = PR keyPrinc | Key keyPrinc

roles = Commander | Operator | CA

1.2 Theorems

[ApRuleActive_thm]

⊢ (M, Oi, Os) sat
Name (PR (Role Operator)) controls prop launch ⇒
(M, Oi, Os) sat
reps (Name (PR (Staff Bob))) (Name (PR (Role Operator)))
(prop launch) ⇒
(M, Oi, Os) sat
Name (Key (Staff Bob)) quoting Name (PR (Role Operator)) says
prop launch ⇒
(M, Oi, Os) sat prop launch impf prop activate ⇒
(M, Oi, Os) sat
Name (Key (Role CA)) speaks_for Name (PR (Role CA)) ⇒
(M, Oi, Os) sat
Name (Key (Role CA)) says
Name (Key (Staff Bob)) speaks_for Name (PR (Staff Bob)) ⇒
(M, Oi, Os) sat
Name (PR (Role CA)) controls
Name (Key (Staff Bob)) speaks_for Name (PR (Staff Bob)) ⇒
(M, Oi, Os) sat prop activate

[ApRuleStandDown_thm]

⊢ (M, Oi, Os) sat Name (PR (Role Operator)) controls prop abort ⇒
(M, Oi, Os) sat
reps (Name (PR (Staff Bob))) (Name (PR (Role Operator)))
(prop abort) ⇒

```
(M, Oi, Os) sat
Name (Key (Staff Bob)) quoting Name (PR (Role Operator)) says
prop abort ⇒
(M, Oi, Os) sat prop abort impf prop stand_down ⇒
(M, Oi, Os) sat
Name (Key (Role CA)) speaks_for Name (PR (Role CA)) ⇒
(M, Oi, Os) sat
Name (Key (Role CA)) says
Name (Key (Staff Bob)) speaks_for Name (PR (Staff Bob)) ⇒
(M, Oi, Os) sat
Name (PR (Role CA)) controls
Name (Key (Staff Bob)) speaks_for Name (PR (Staff Bob)) ⇒
(M, Oi, Os) sat prop stand_down
```

[OpRuleAbort_thm]

```
⊢ (M, Oi, Os) sat Name (PR (Role Commander)) controls prop nogo ⇒
  (M, Oi, Os) sat
  reps (Name (PR (Staff Alice))) (Name (PR (Role Commander)))
    (prop nogo) ⇒
  (M, Oi, Os) sat
  Name (Key (Staff Alice)) quoting
  Name (PR (Role Commander)) says prop nogo ⇒
  (M, Oi, Os) sat prop nogo impf prop abort ⇒
  (M, Oi, Os) sat
  Name (Key (Role CA)) speaks_for Name (PR (Role CA)) ⇒
  (M, Oi, Os) sat
  Name (Key (Role CA)) says
  Name (Key (Staff Alice)) speaks_for Name (PR (Staff Alice)) ⇒
  (M, Oi, Os) sat
  Name (PR (Role CA)) controls
  Name (Key (Staff Alice)) speaks_for Name (PR (Staff Alice)) ⇒
  (M, Oi, Os) sat
  Name (Key (Staff Bob)) quoting Name (PR (Role Operator)) says
  prop abort
```

[OpRuleLaunch_thm]

```
⊢ (M, Oi, Os) sat Name (PR (Role Commander)) controls prop go ⇒
  (M, Oi, Os) sat
  reps (Name (PR (Staff Alice))) (Name (PR (Role Commander)))
    (prop go) ⇒
  (M, Oi, Os) sat
  Name (Key (Staff Alice)) quoting
  Name (PR (Role Commander)) says prop go ⇒
  (M, Oi, Os) sat prop go impf prop launch ⇒
  (M, Oi, Os) sat
```

Name (Key (Role CA)) speaks_for Name (PR (Role CA)) ⇒
(M, Oi, Os) sat
Name (Key (Role CA)) says
Name (Key (Staff Alice)) speaks_for Name (PR (Staff Alice)) ⇒
(M, Oi, Os) sat
Name (PR (Role CA)) controls
Name (Key (Staff Alice)) speaks_for Name (PR (Staff Alice)) ⇒
(M, Oi, Os) sat
Name (Key (Staff Bob)) quoting Name (PR (Role Operator)) says
prop launch

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