Validation d'un Système Drone

Valentin Brossard

@vbrossard

valentin@sogilis.com

Sogilis

La mise au point des exigences nécessite des aller/retour

Les incohérences entre le code et les exigences sont découvertes tard

It follows !

HEXO+

Squadrone System - Version 0.2

Scénario Batterie Faible

Seuil des 10%
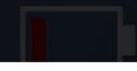
Low Battery!

There's only **10%** battery left.
Where do you want to land?

Land at takeoff position

Land here

Come above me

Seuil des 5%

16:54

Low Battery!

There's no battery left.
HEXO+ will land here in 10 seconds

OK, land here

Exigence Stimulus 1

Requirement 1

From `batteryLevel < 10` , pulse `batteryUnder10Percent`

From `requestReturnToLaunch` , pulse `returnToLaunch`

From `requestComeToMe` , pulse `comeToMe`

From `requestLand` , pulse `land`

Exigence Stimulus 2

Requirement 2

```
        batteryLevel < 5        pulse    batteryUnder5Percent
From                     ,      pulse    land
```

Problème ?

Environnement

La batterie diminue

Batterie en Stimulus

Battery Behaviour

derivative of batteryLevel is inside range [-0.5 [1 / second] , 0 [1 / second]]

batteryLevel is inside range [0 , 100]

When onGround , derivative of batteryLevel = 0 [1 / second]

L'utilisateur fait un choix

L'utilisateur en Stimulus
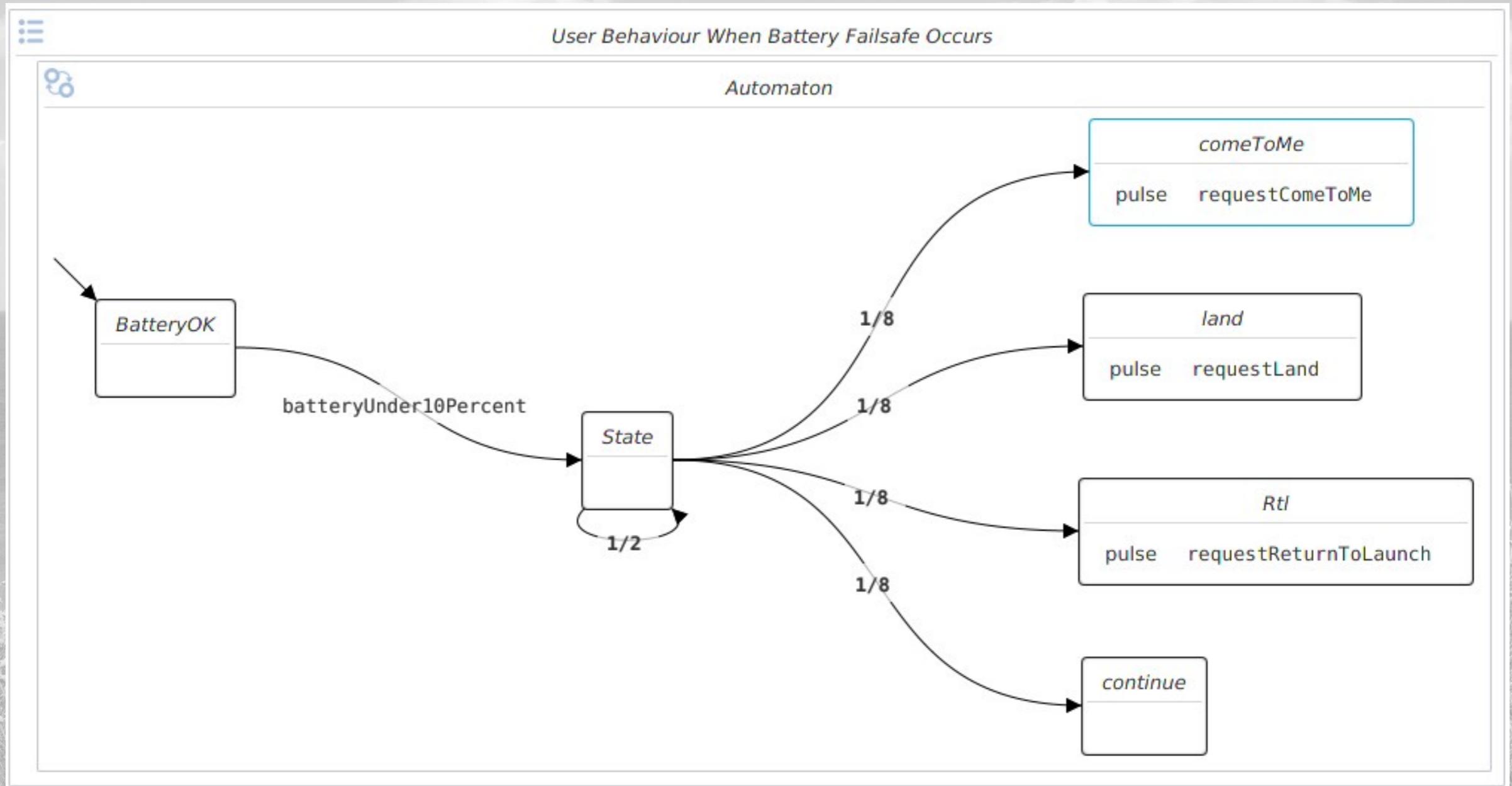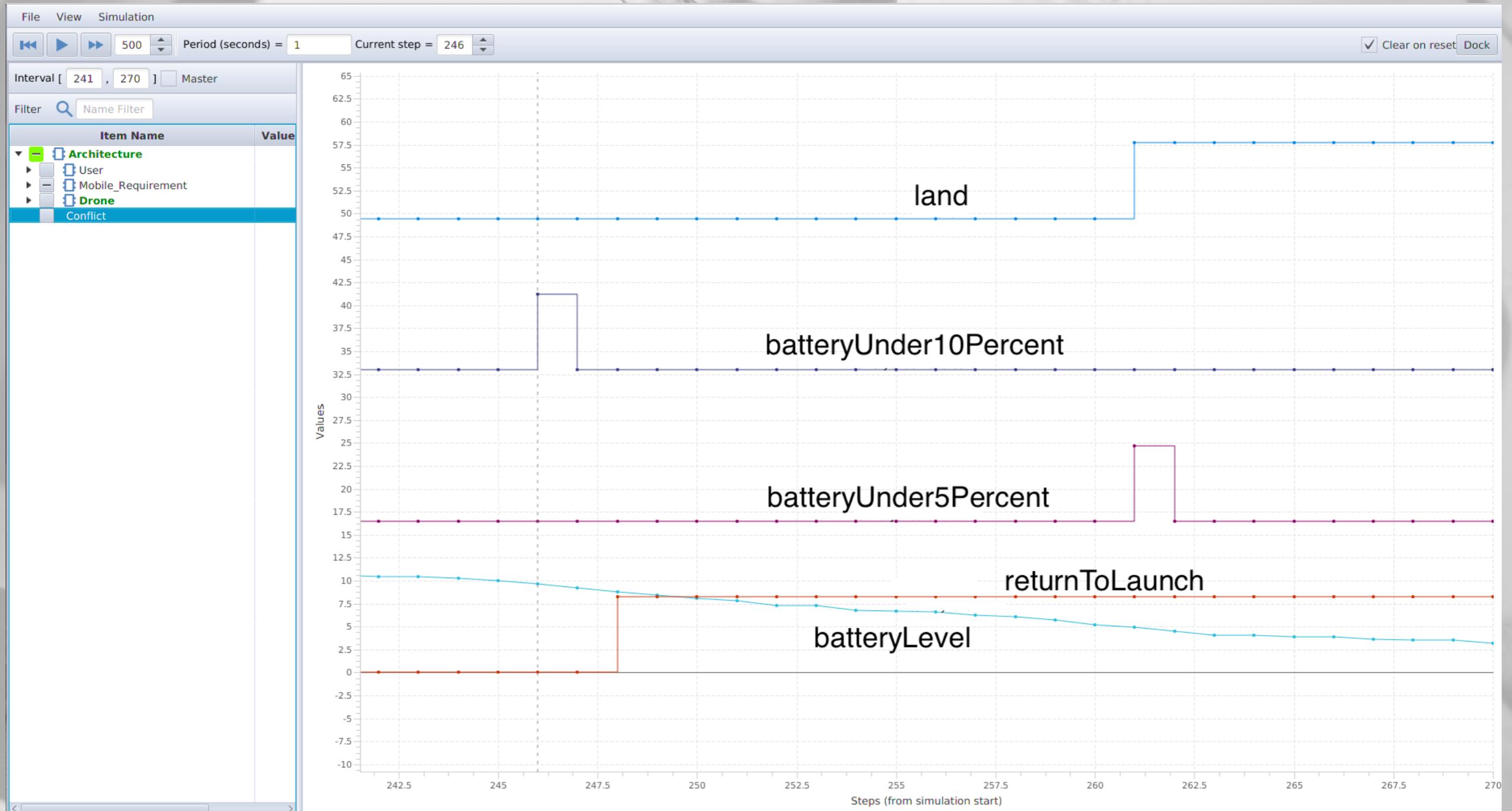
User Behaviour When Battery Failsafe Occurs

Simulation

Il y a deux erreurs

Simulation
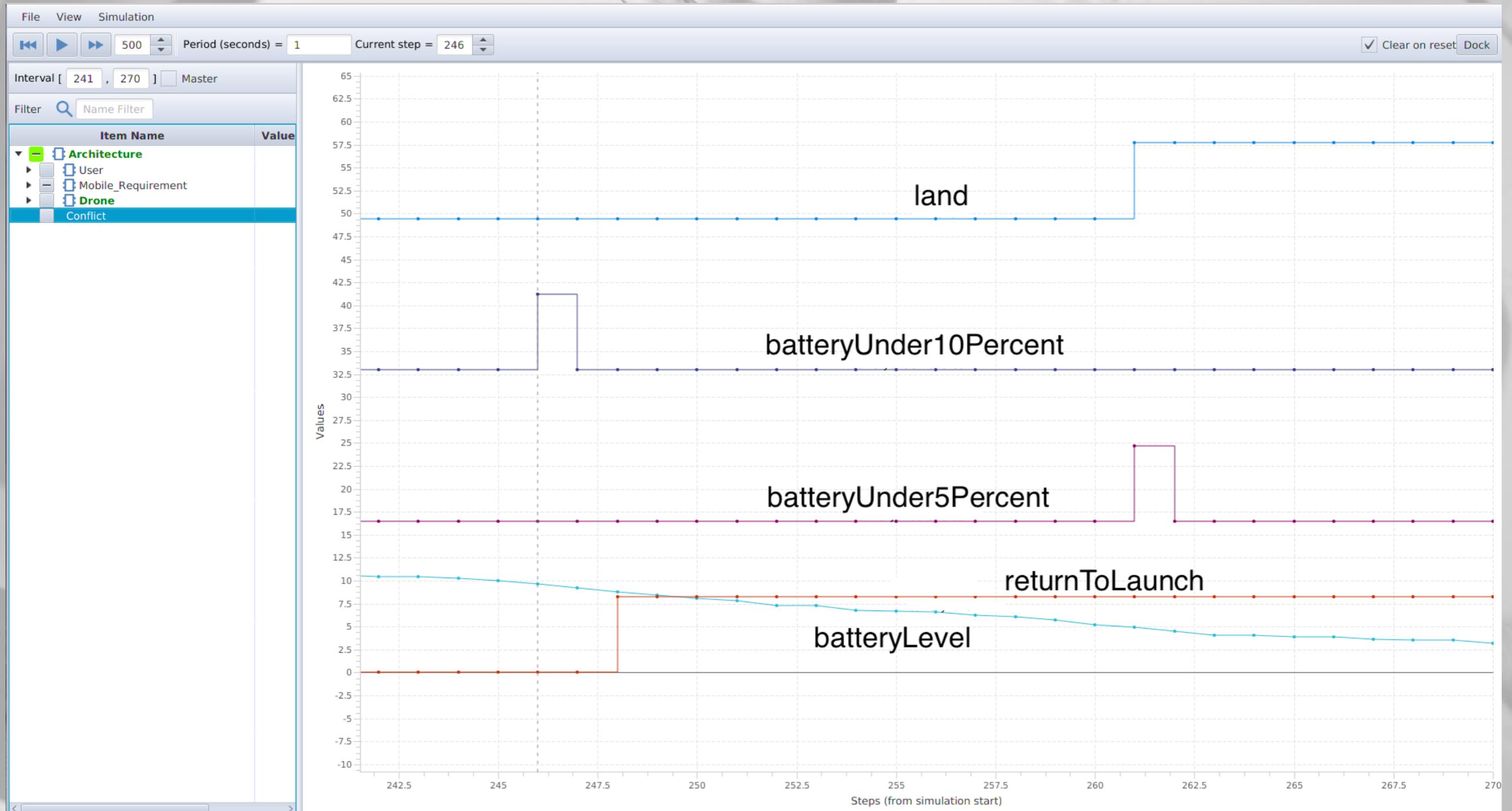
Simulation Correcte
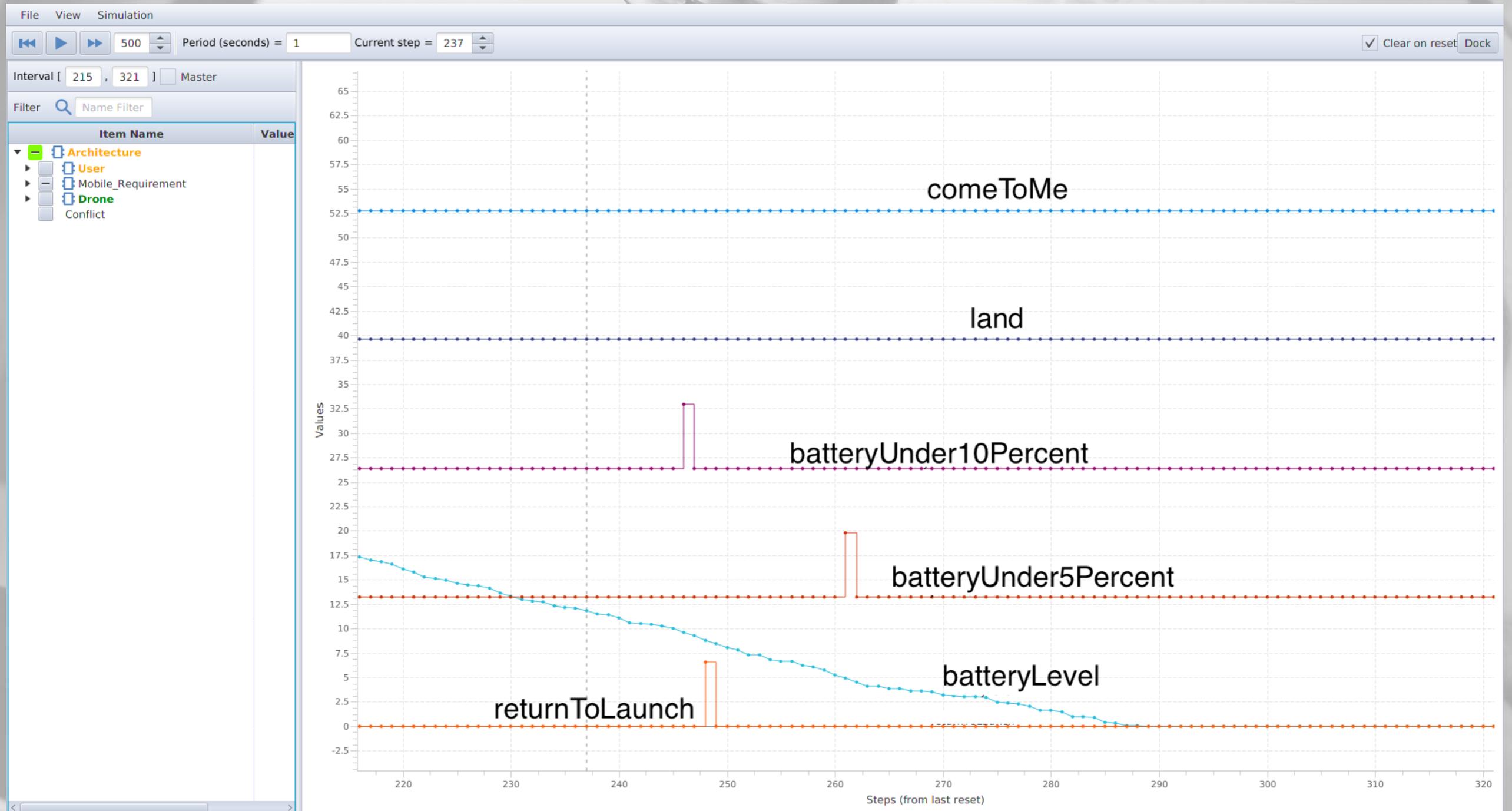
Diminution des aller/retour

Place au développement

# Cohérence entre les exigences et le code

Cohérence Code / Exigences
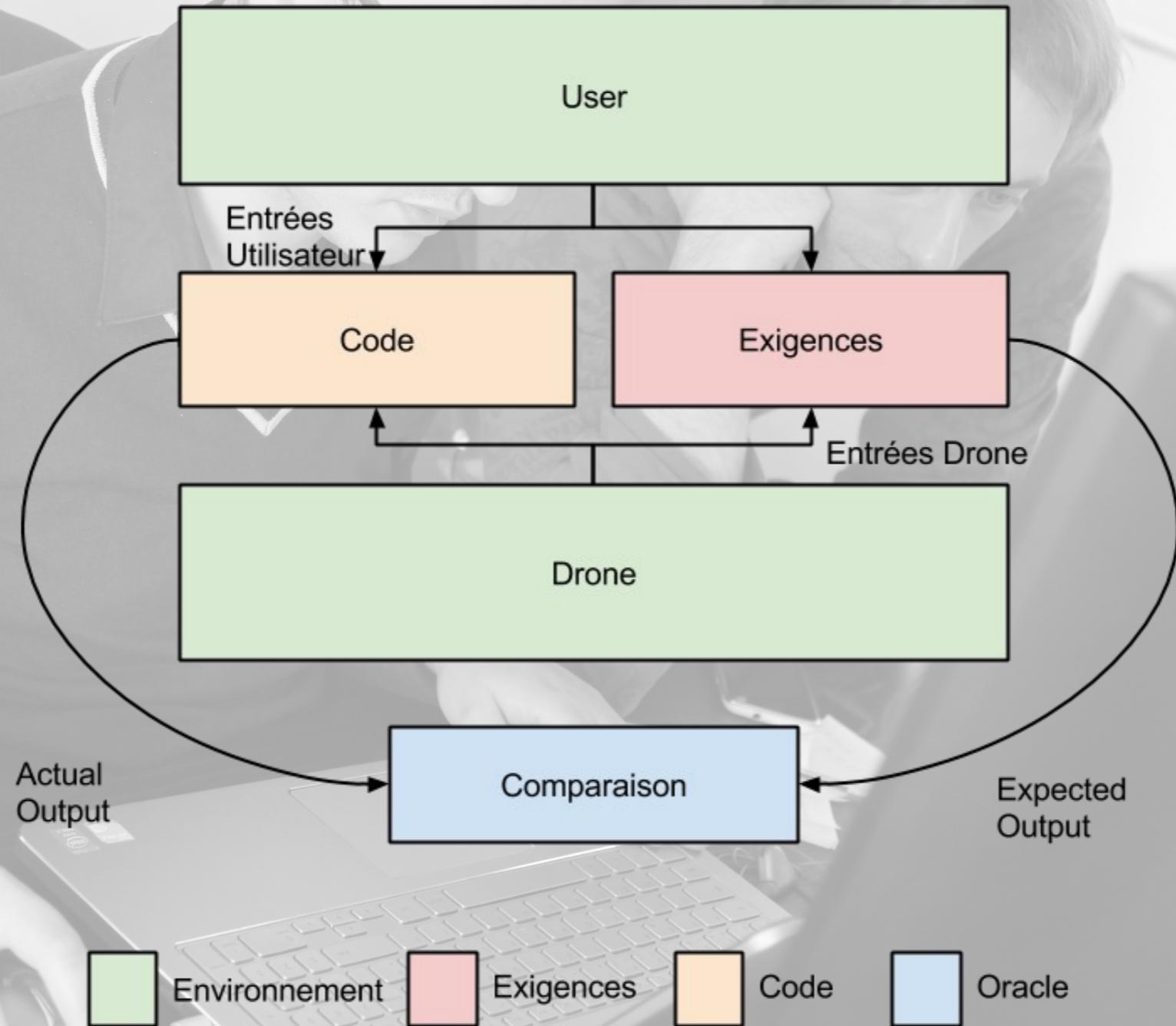
Simulation Incorrecte
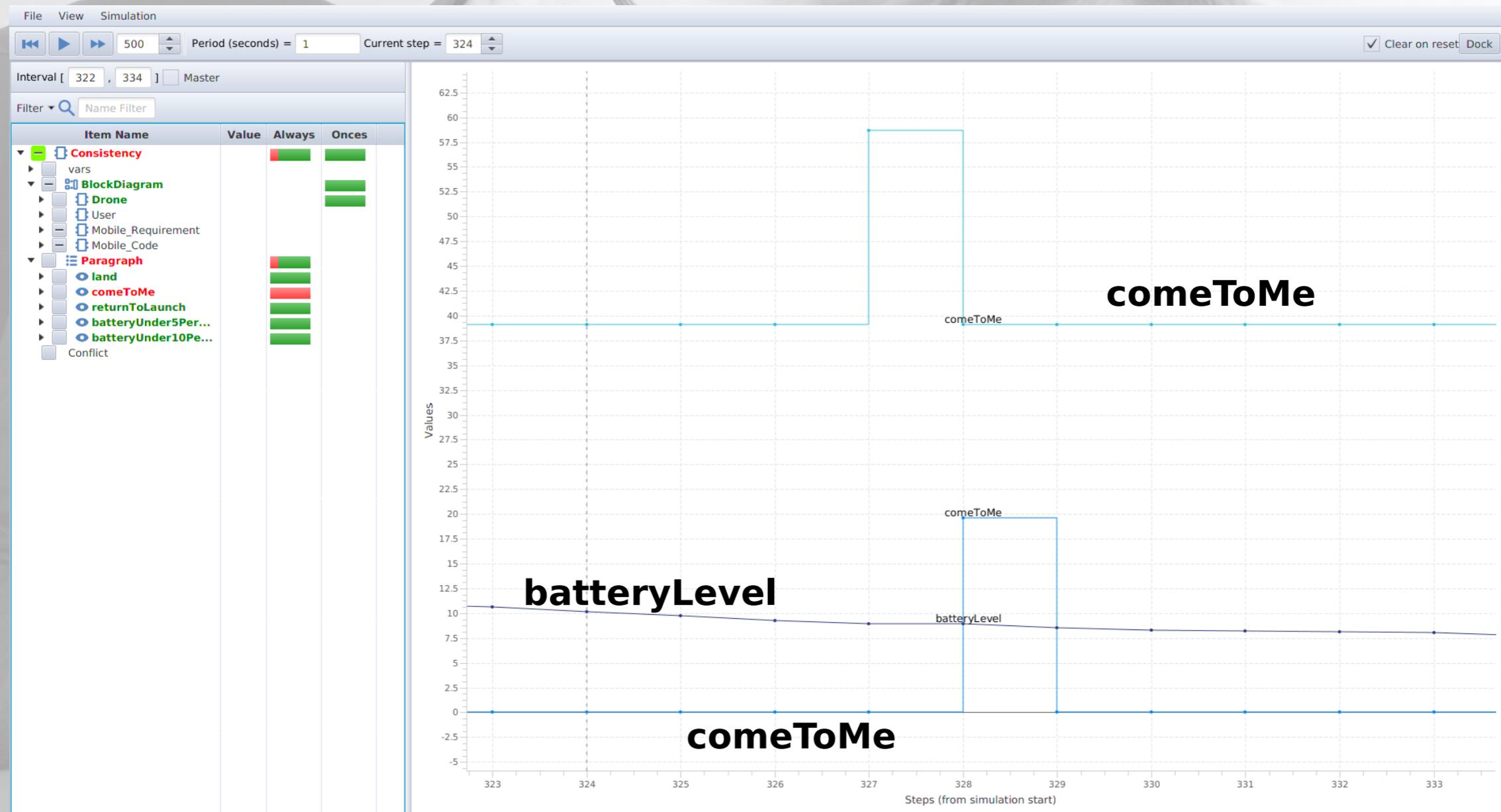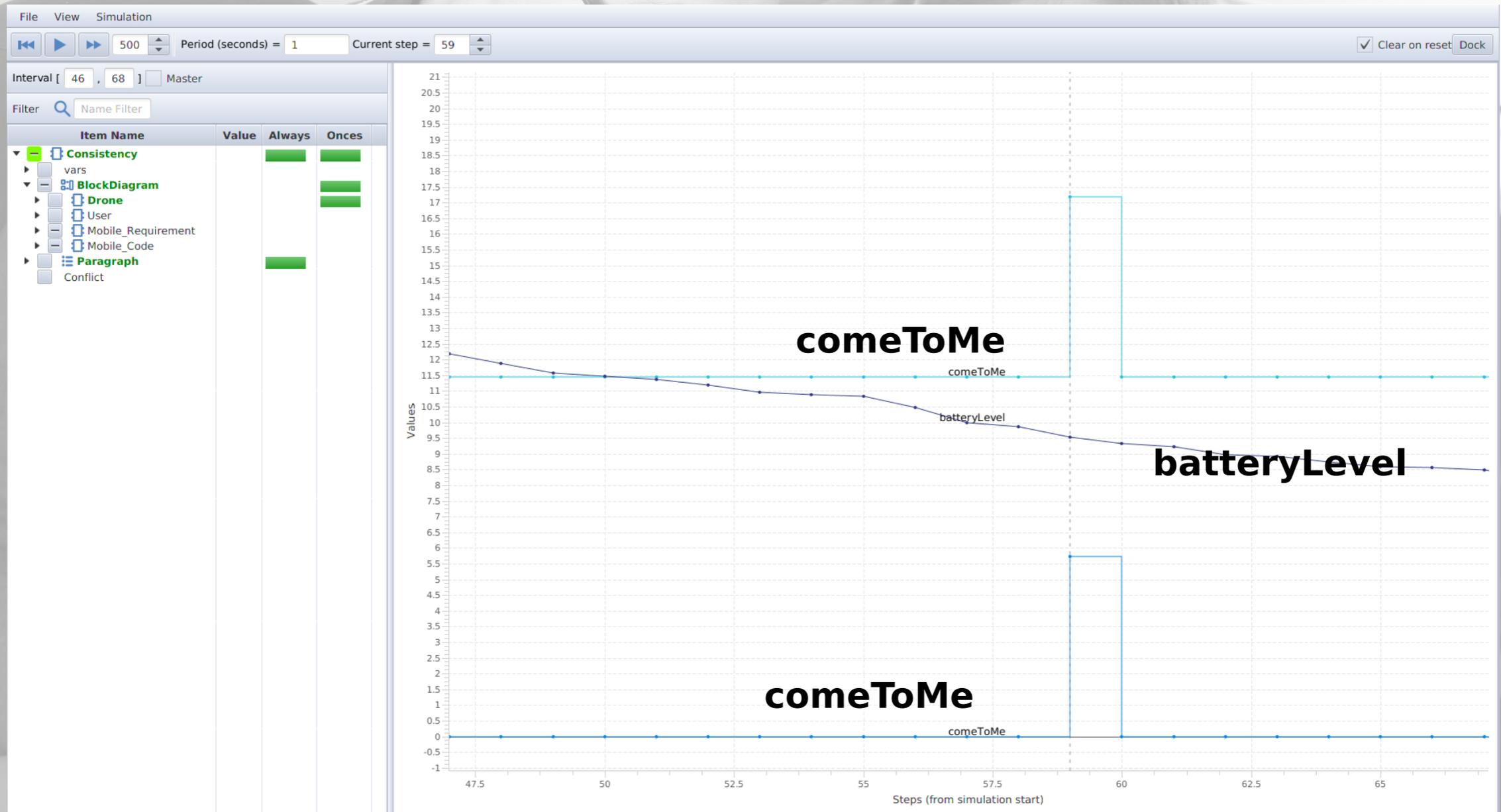
Simulation Correcte

Cohérence globale ?

Couverture d'exigence

Checks

checkOnceLand : Check Once   land0nce

checkOnceReturnToLaunch : Check Once   returnToLaunch0nce

checkOnceContinue : Check Once   continue0nce

checkOnceComeToMe : Check Once   comeToMe0nce

Cohérence Code/Exigences

Cohérence dans le temps ?
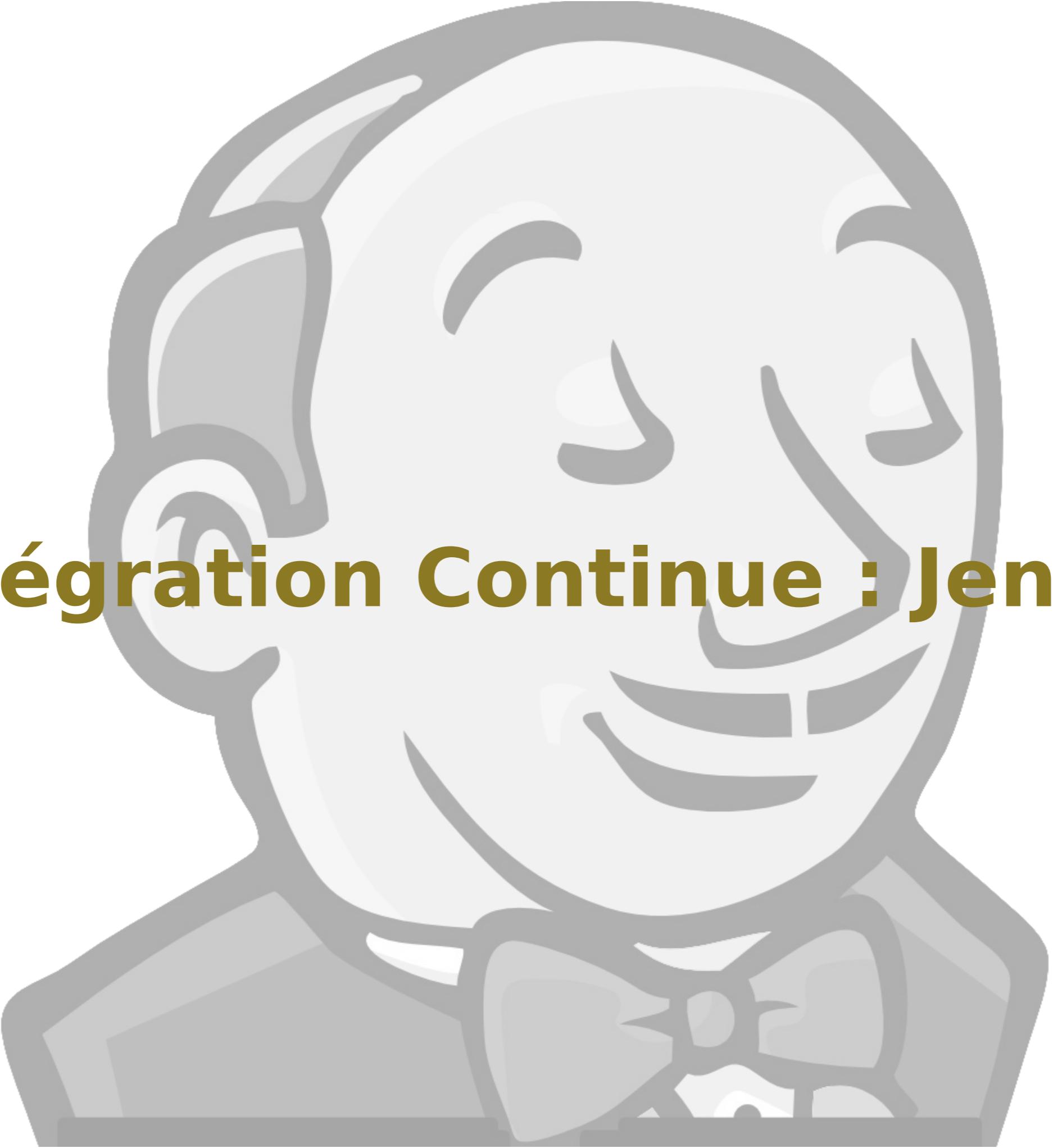
L'intégration Continue : Jenkins

L'intégration Continue : Jenkins

&

argosim®

Cohérence au cours du temps

Stimulus participe à l'efficience dans le développement logiciel