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# Validation d'un Système Drone

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A close-up photograph of a person's feet in denim jeans and brown boots stepping on a white plastic bag on a paved road. The bag is being crushed under the boot, with a stream of white plastic material being pushed down. The background is a blurred road with white lane markings.

**La mise au point des exigences  
nécessite des aller/retour**

A close-up photograph of a person's feet stepping on a crack in the pavement. The person is wearing dark jeans and brown leather boots. The boot on the left is stepping on a crack, and the sole is tearing through it, with a piece of the sole hanging down. The background is a blurred outdoor setting with a road and some greenery.

**Les incohérences entre le code et les exigences sont découvertes tard**



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An aerial, high-angle photograph of a snow-covered mountain slope. The terrain is marked with winding tracks and ridges. In the lower right foreground, a snowboarder is captured in motion, leaning into a turn and kicking up a cloud of snow. The overall scene is bright and wintry.

**HEXO +**

Freedom of Movement

**It follows !**



# Scénario Batterie Faible



Seuil des 10%



## Low Battery!

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



Land at takeoff  
position



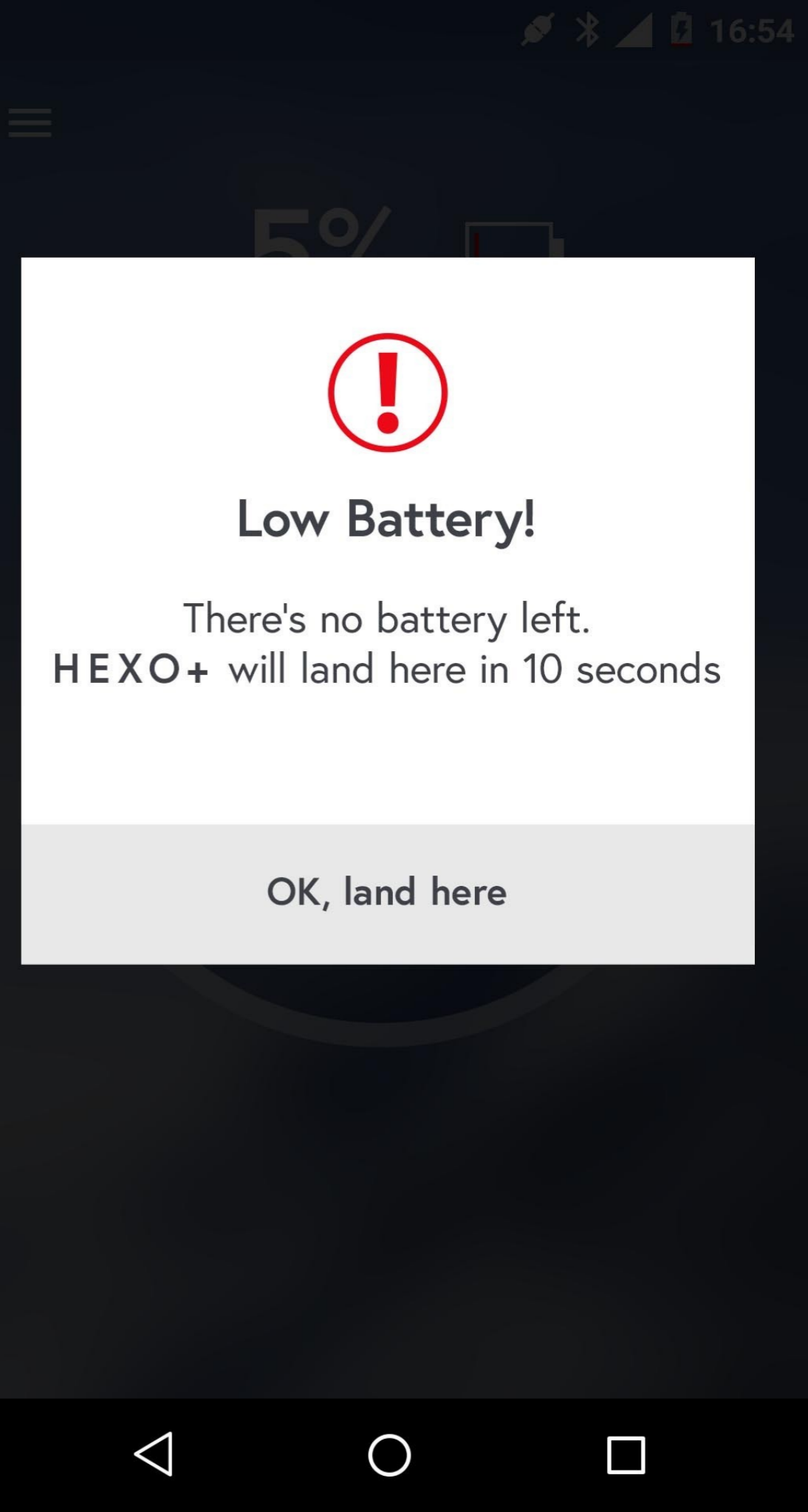
Land here



Come above me



Seuil des 5%



# 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*

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

A close-up photograph of a person's feet on a paved surface. The person is wearing dark denim jeans and brown leather cowboy boots. The left boot is lifted, revealing a sharp metal nail protruding from the sole of the shoe. The right boot is planted on the ground. The scene is brightly lit, casting shadows on the pavement. The word "Problème ?" is overlaid in a bold, dark font across the center of the image.

**Problème ?**

# Environnement



# La batterie diminue

A landscape photograph showing a coastal scene. In the foreground, there is a field of tall, dry grasses and some small plants. The middle ground is a calm, dark sea extending to the horizon. The sky is filled with scattered, white, fluffy clouds. The overall tone is somewhat muted and overcast. The text 'La batterie diminue' is centered in a bold, dark green font.

# Batterie en Stimulus



## Battery Behaviour

$\left( \text{derivative of } \text{batteryLevel} \right)$  is inside range [  $-0.5$  [1 / second] ,  $0$  [1 / second] ]

$\text{batteryLevel}$  is inside range [  $0$  ,  $100$  ]

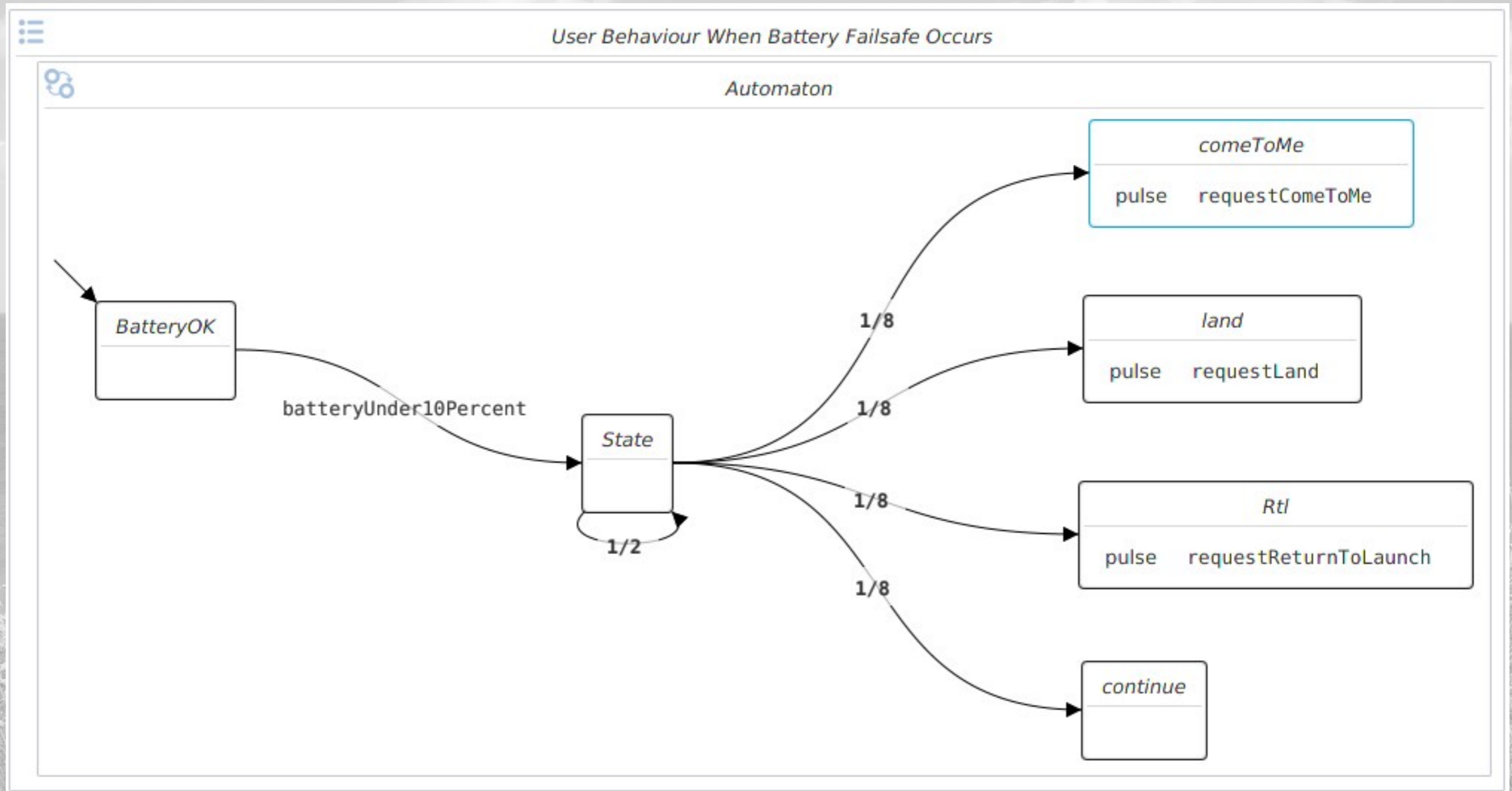
When  $\text{onGround}$  ,  $\left( \text{derivative of } \text{batteryLevel} \right) = 0$  [1 / second]



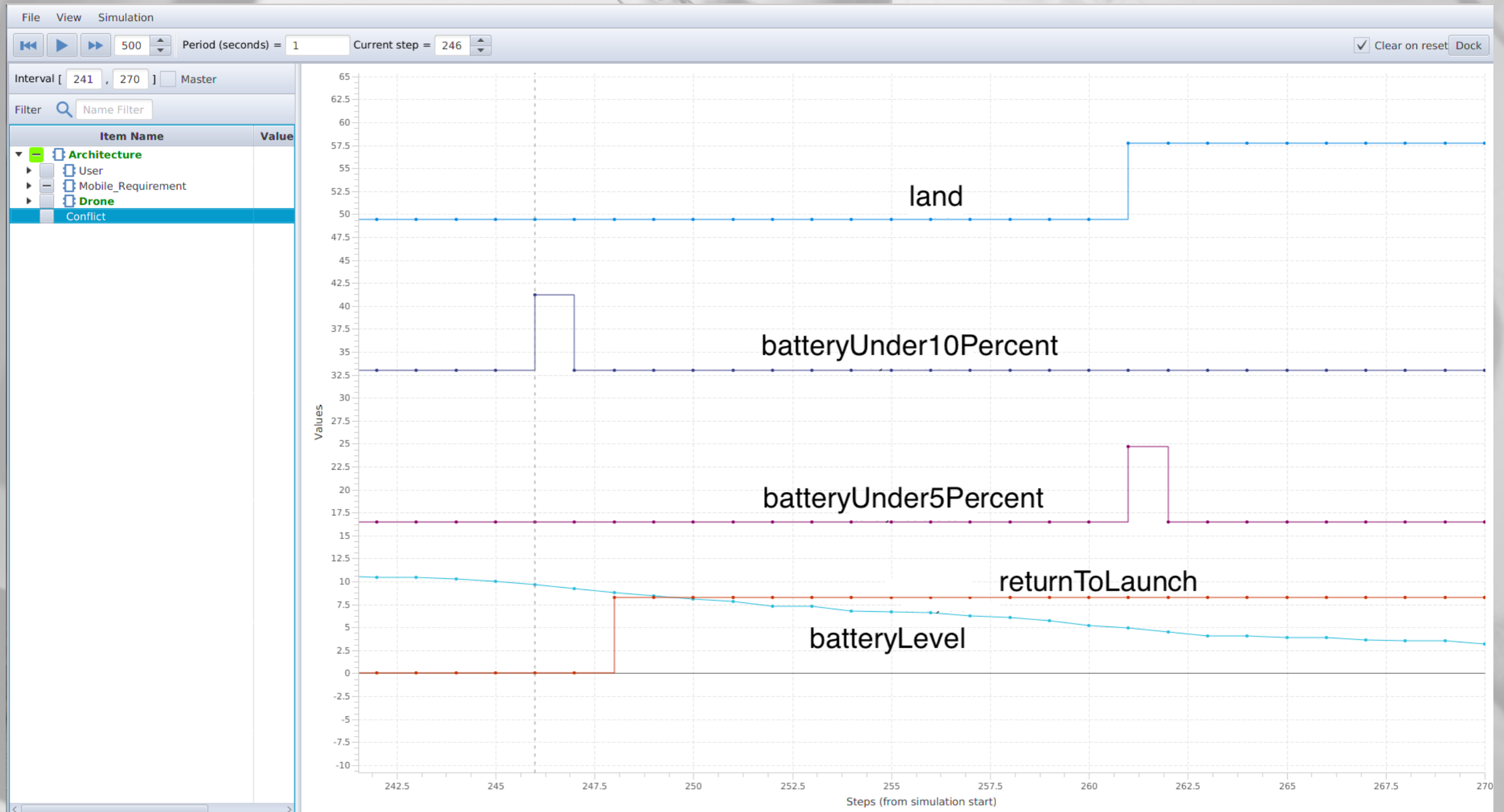
**L'utilisateur fait un choix**



# L'utilisateur en Stimulus



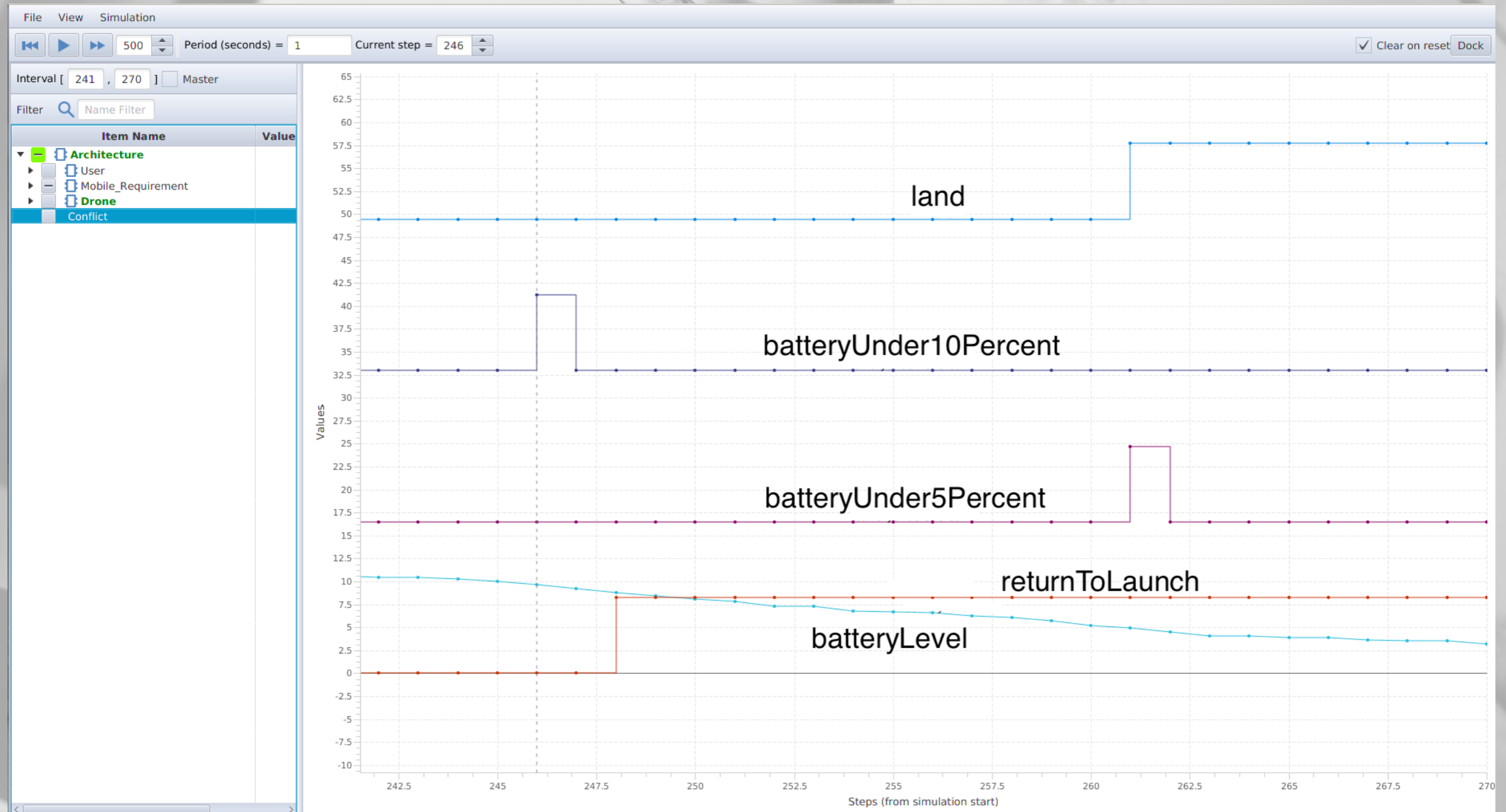
# Simulation



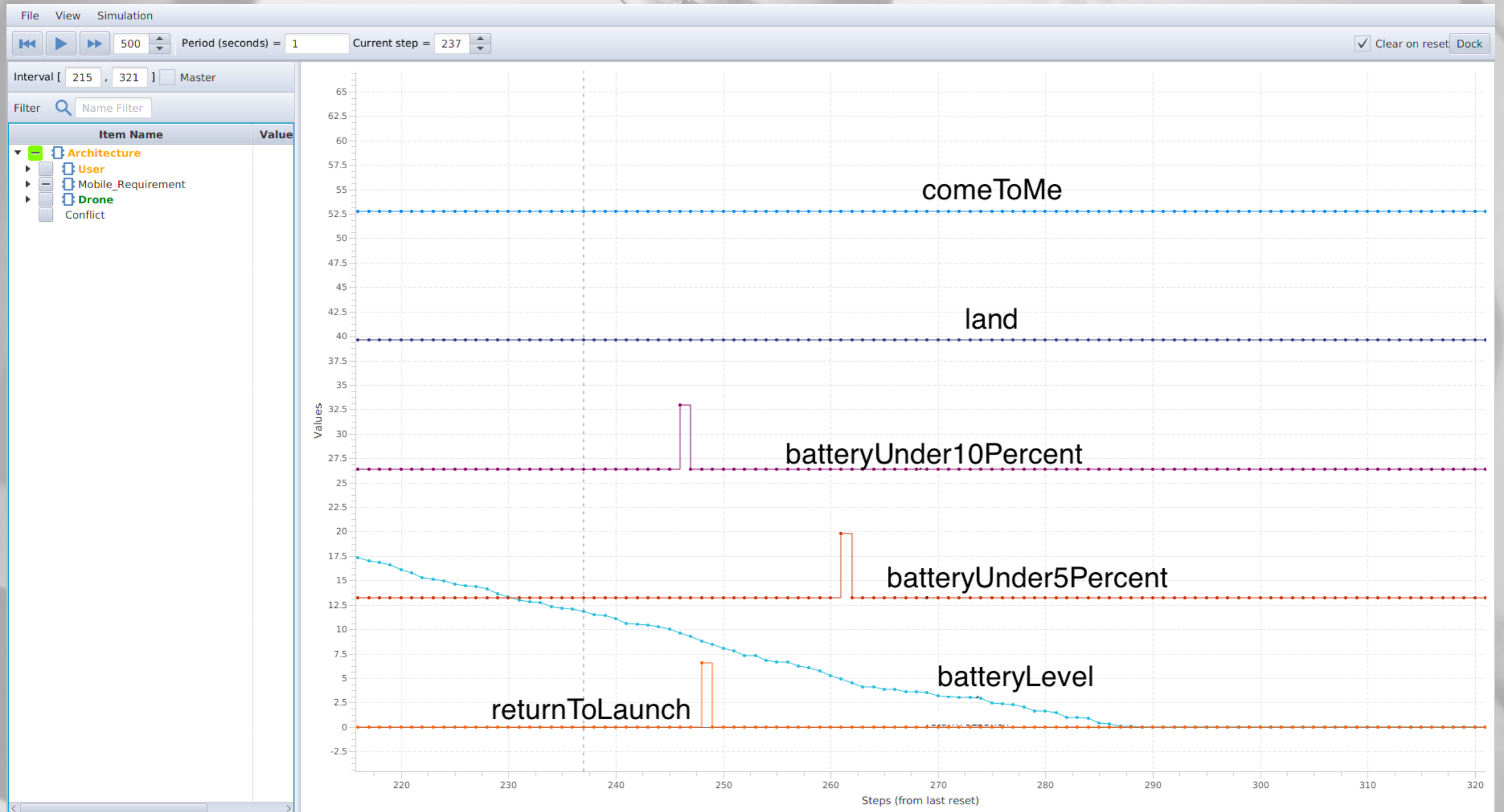
A close-up photograph of a person's feet on a paved road. The person is wearing dark jeans and brown cowboy boots. The left boot is lifted, and a thick, white, fibrous substance is being pulled from the sole of the boot, hanging down to the pavement. The right boot is planted on the pavement. The background is a blurred road with white lane markings. The text "Il y a deux erreurs" is overlaid in a bold, dark green font across the center of the image.

**Il y a deux erreurs**

# Simulation



# Simulation Correcte





**Diminution des aller/retour**

A grayscale photograph of two men in an office environment. The man on the left is seated and wearing glasses, focused on a laptop. The man on the right is leaning over his shoulder, resting his chin on his hand, looking at the laptop screen. A large computer monitor is visible on the right side of the frame. The background shows office shelves with some items. The overall tone is professional and collaborative.

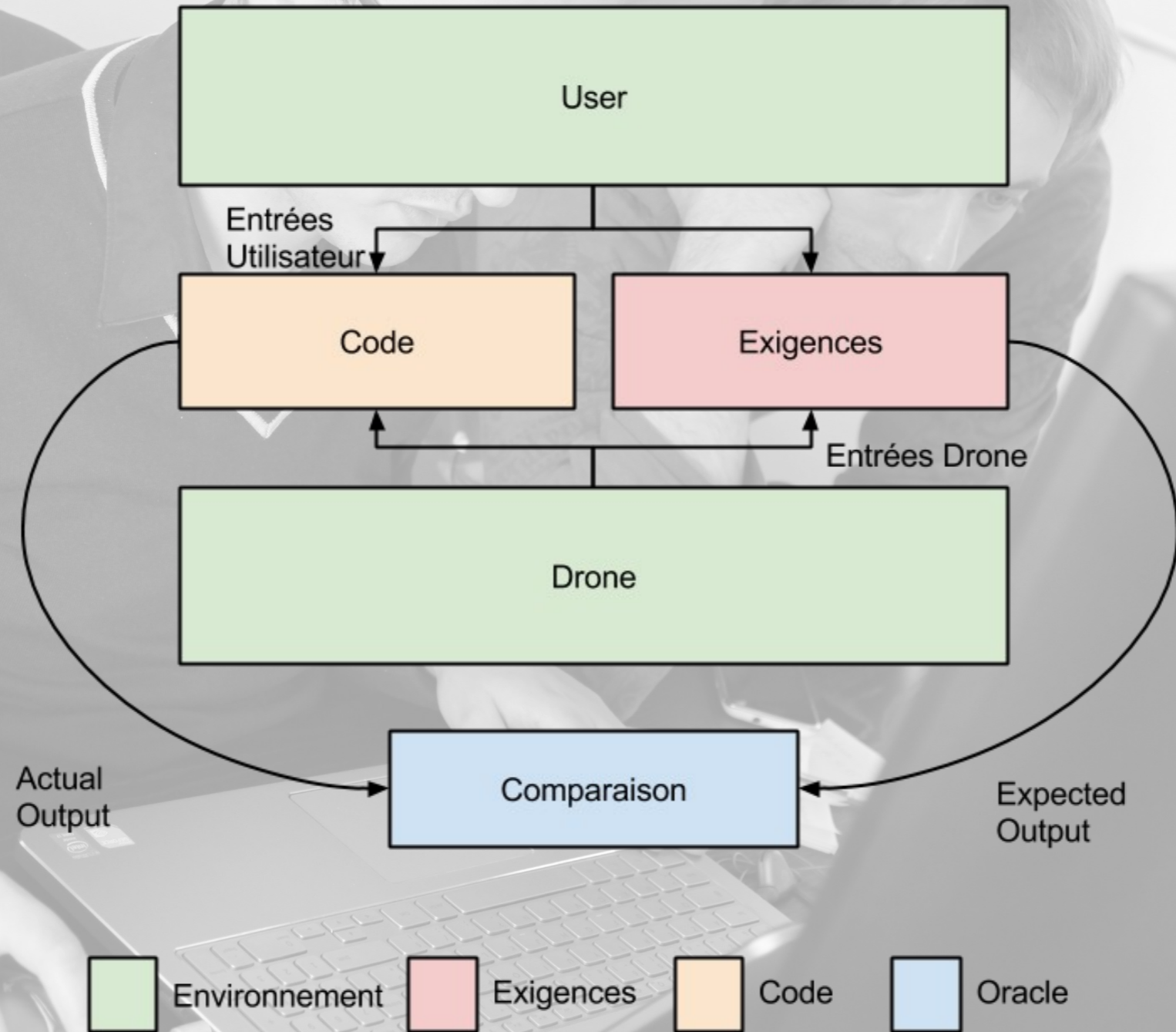
**Place au développement**

A close-up photograph of a person's feet in jeans and boots walking on a paved road. The person's right foot is stepping on a clear plastic bag, which is being crushed under the boot. The background is blurred, showing a road and some foliage. The text "Cohérence entre les exigences et le code" is overlaid in a bold, olive-green font across the center of the image.

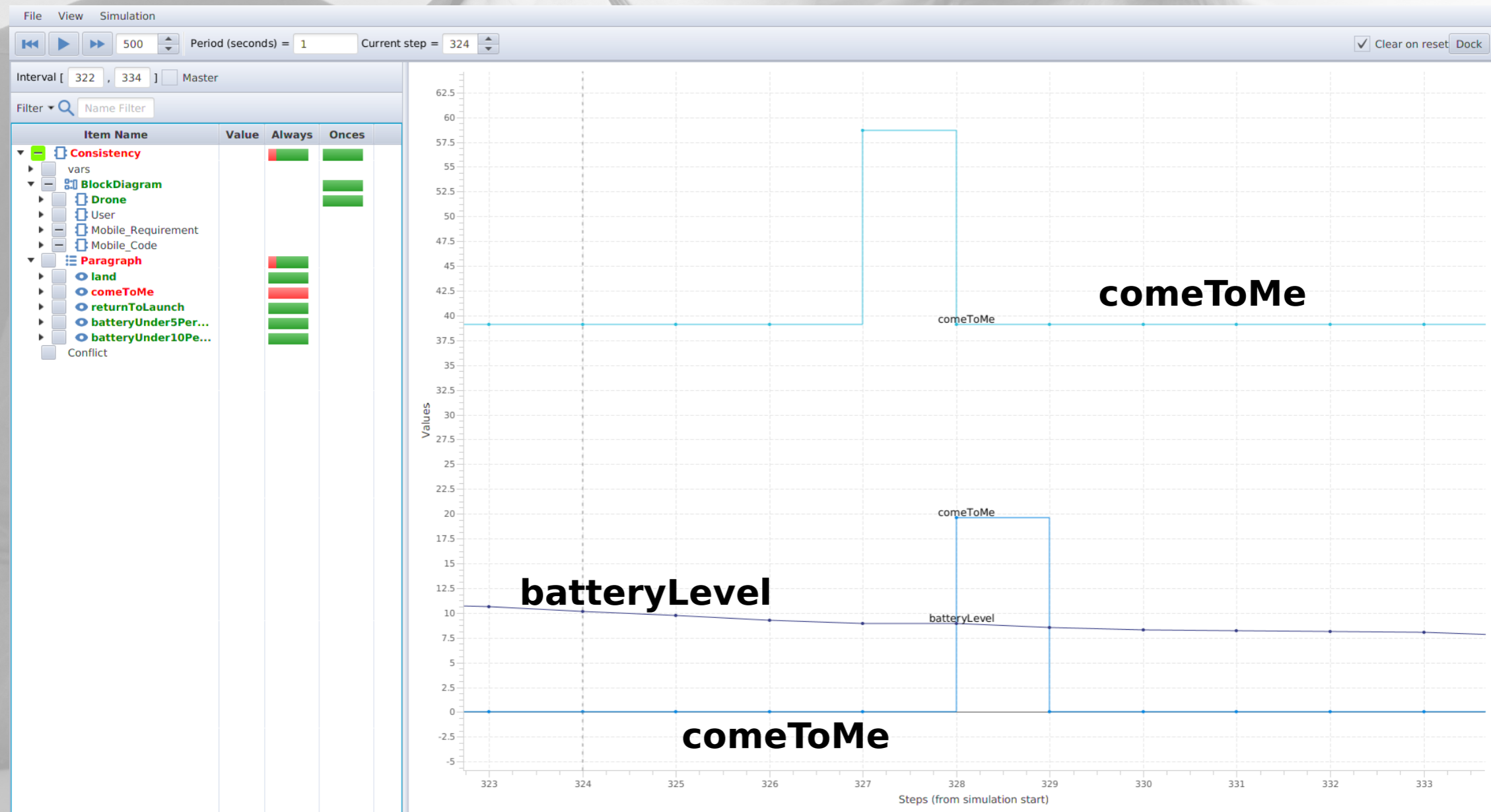
**Cohérence entre les  
exigences et le code**



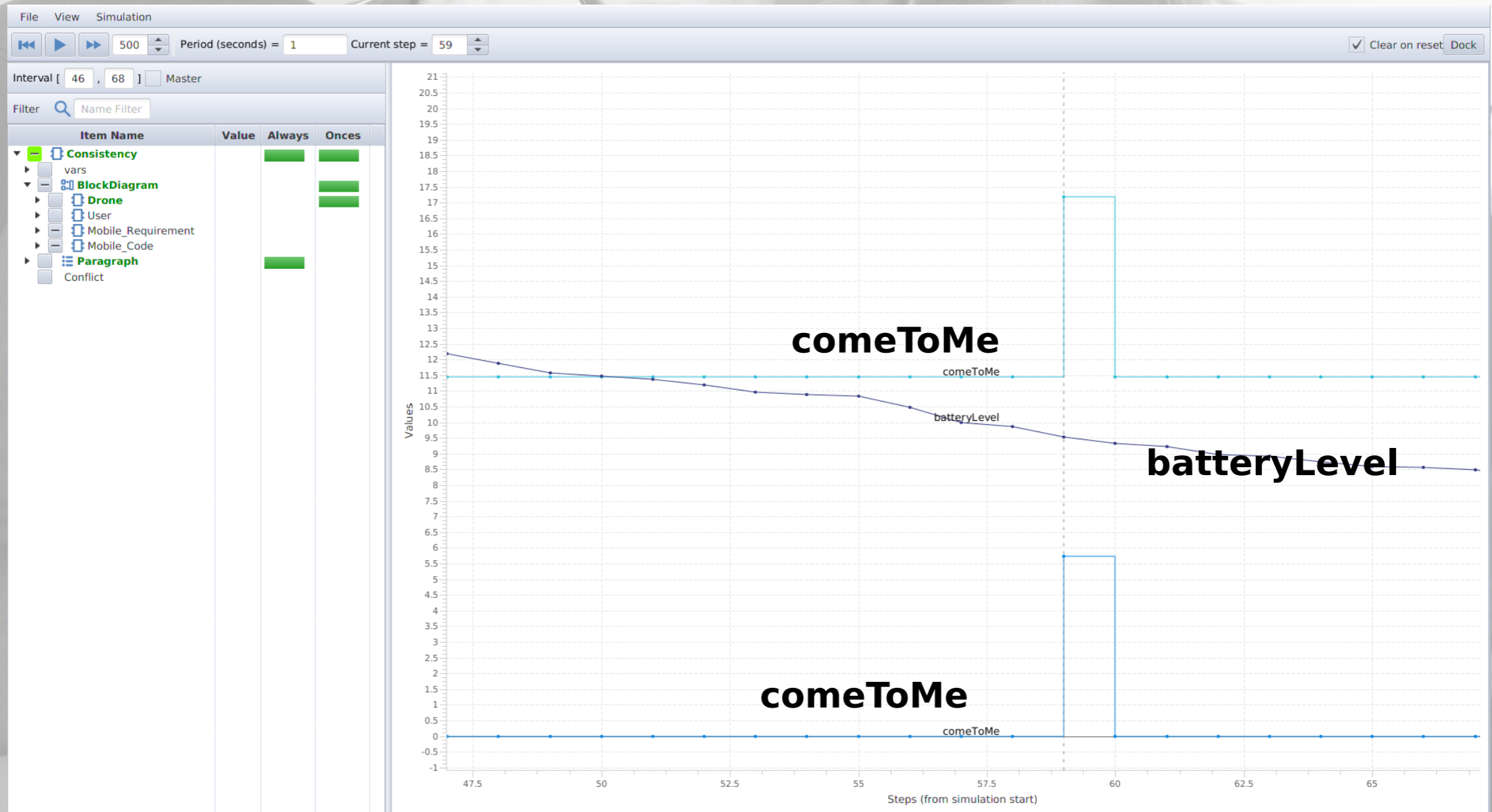
# Cohérence Code / Exigences



# Simulation Incorrecte



# Simulation Correcte



A low-angle, close-up photograph of a person's feet stepping on a road. The person is wearing dark denim jeans and brown leather boots. The left boot is in the process of stepping on a white, fibrous, and somewhat sticky substance that is being pulled apart, creating a vertical strand. The right boot is planted firmly on the asphalt. The background is a blurred road with white lane markings. The text "Cohérence globale ?" is overlaid in a bold, dark green font across the center of the image.

**Cohérence globale ?**

# Couverture d'exigence



Checks

`checkOnceLand` : Check Once `landOnce`

`checkOnceReturnToLaunch` : Check Once `returnToLaunchOnce`

`checkOnceContinue` : Check Once `continueOnce`

`checkOnceComeToMe` : Check Once `comeToMeOnce`



**Cohérence Code/Exigences**

A close-up photograph of a person's feet in jeans and boots stepping on a white, fibrous substance on a road. The text "Cohérence dans le temps ?" is overlaid in a bold, dark green font across the center of the image.

**Cohérence dans le temps ?**



# **L'intégration Continue : Jenkins**



# L'intégration Continue : Jenkins



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**Cohérence au cours du temps**



**Stimulus participe à l'efficience  
dans le  
développement logiciel**