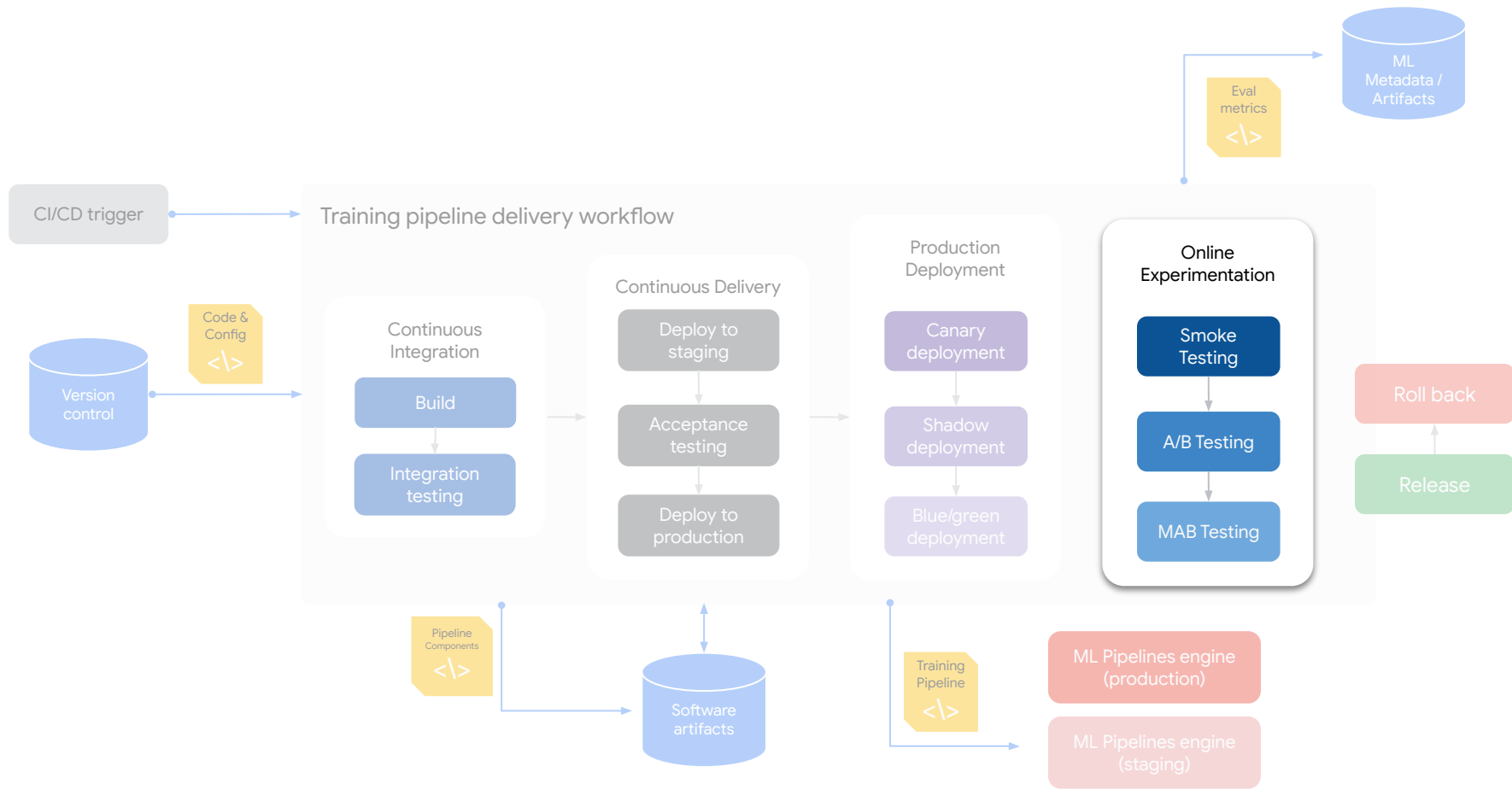
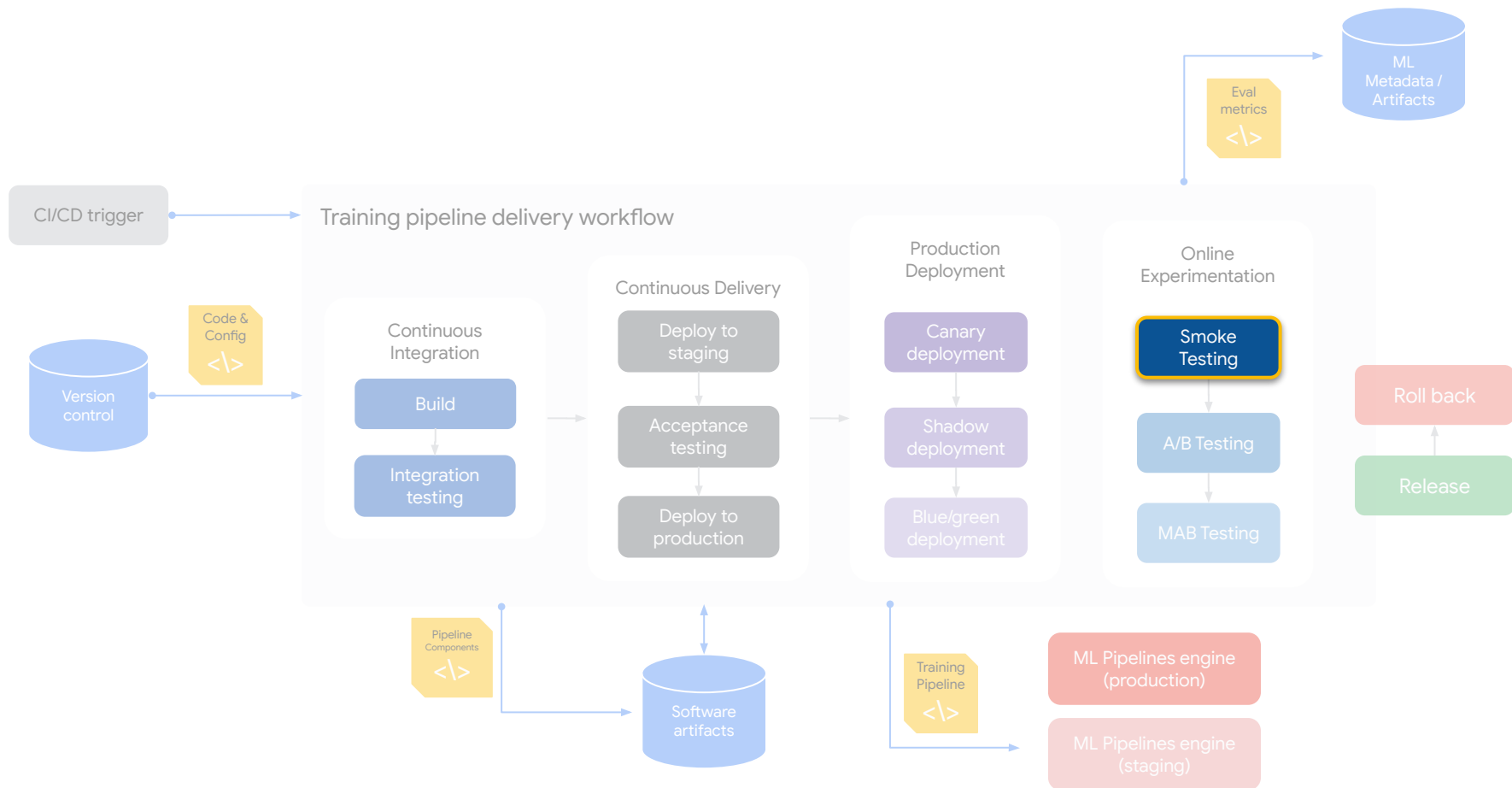


Online Experimentation







Smoke Tests



The word "smoke testing" is thought to have originated in the **plumbing** profession, where smoke is commonly used by plumbers to **check for leaks** and breaks in pipe systems.

Smoke Tests



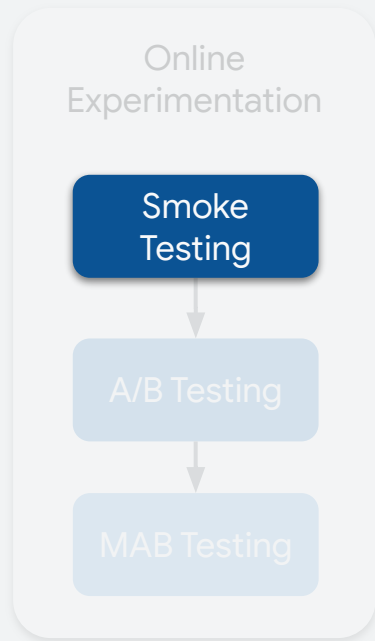
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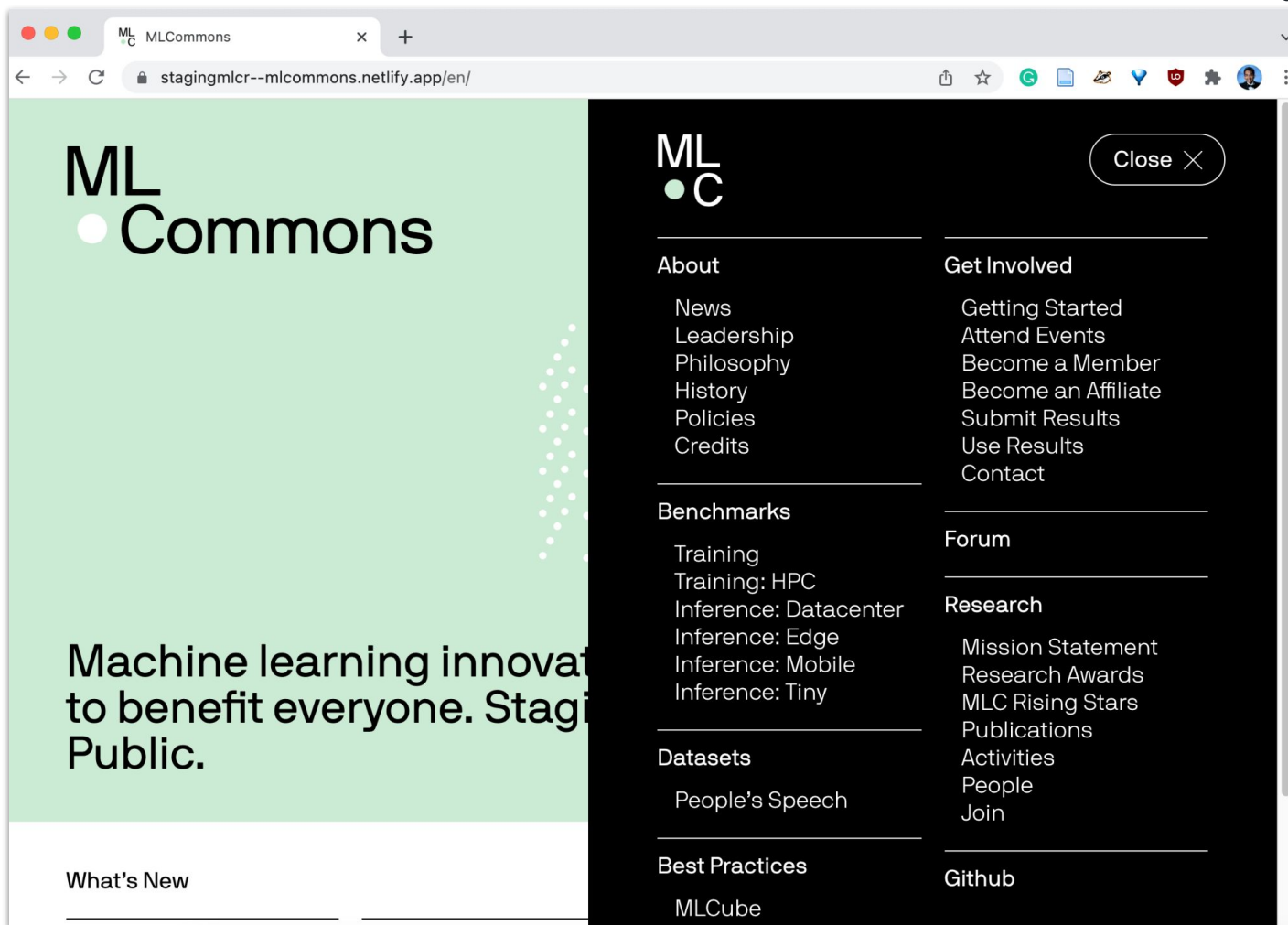
Another believe is that the word comes from **hardware testing**, in which a gadget is inspected for smoke from its **components** when it is initially turned on.



Smoke Tests

- As part of the build verification testing (**BVT**) process, test the application's key features
- This is non-exhaustive testing with a small **sample size**. Smoke testing is usually done with valid data and positive situations.





ML Commons

stagingmlcr--mlcommons.netlify.app/en/

Dimensions: Pixel 2 411 x 731 87% Mobile

ML Commons

Menu

Machine learning innovation to benefit everyone. Staging Public.

What's New

06.30.2021

ML Commons™ Releases MLPerf™ Training v1.0 Results

The latest benchmark submission round includes over 650 ML Training performance results for leading ML

06.16.2021

ML Commons™ Releases MLPerf™ Tiny Inference Benchmark

The new MLPerf Tiny v0.5 benchmark suite releases first performance results, measuring neural

Elements

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>...</head>
  <body data-new-gr-c-s-check-loaded="14.1043.0" data-gr-ext-installed> flex
    <header class="header grid-wrapper page-pad">...</header> flex
    <main class="tmpl-home">
      ...
      <div class="home-hero page-pad col-12">...</div> flex == $0
      <div class="recent-news page-pad">...</div>
      <div class="home-text page-pad">...</div>
      <div class="brand-pillars grid-wrapper">...</div> flex
      <div class="home-features grid-wrapper page-pad">...</div> flex
      <div class="member-list page-pad">...</div>
    </main>
    <footer class="footer grid-wrapper page-pad text-xs">...</footer> flex
  <script src="/scripts/index.is"></script>
</body>
html body main.tmpl-home div.home-hero.page-pad.col-12
```

Styles

Filter

element.style {

.home-hero {

.col-12 {

.brand-pillars, .global-nav, .page-pad {

* {

index.css:1

index.css:1

index.css:1

index.css:1

index.css:1

Console

Filter

Default levels 1 issue: 1

The screenshot shows a web browser window with the URL `stagingmlcr--mlcommons.netlify.app/en/`. The page displays the MLCommons logo, a navigation menu, and a hero section with the text "Machine learning innovation to benefit everyone. Staging Public." Below this, there are two columns of "What's New" news items. A red arrow points to the MLCommons logo. The Chrome DevTools Elements panel is open on the right, showing the HTML structure of the page. The selected element is `div.home-hero.page-pad.col-12`, and its styles are listed below.

HTML Structure:

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>...</head>
  <body data-new-gr-c-s-check-loaded="14.1043.0" data-gr-ext-installed>...
    <header class="header grid-wrapper page-pad">...</header>
    <main class="tmpl-home">
      <div class="home-hero page-pad col-12">...</div>
      <div class="recent-news page-pad">...</div>
      <div class="home-text page-pad">...</div>
      <div class="brand-pillars grid-wrapper">...</div>
      <div class="home-features grid-wrapper page-pad">...</div>
      <div class="member-list page-pad">...</div>
    </main>
    <footer class="footer grid-wrapper page-pad text-xs">...</footer>
  </body>
</html>
```

Styles:

```
element.style {
}

.home-hero {
  background-color: #eeced4;
  background-color: var(--brand-color-1);
  padding-bottom: 2rem;
  display: flex;
  flex-direction: column;
}

.col-12 {
  width: 100%;
}

.brand-pillars, .global-nav, .page-pad {
  padding-left: 0.5rem;
  padding-right: 0.5rem;
}

* {
}
```

Dimensions: Pixel 2 411 x 731 87% Mobile

ML Commons

Menu

- Do original functions work?
(Menu button, links, etc.)
- Is the content readable?
- + Fast Feedback
- + Emulation

Machine learning to benefit everyone Public.

What's New

06.30.2021

MLCommons™ Releases MLPerf™ Training v1.0 Results

The latest benchmark submission round includes over 650 ML Training performance results for leading AI

MLCommons™ Releases MLPerf™ Tiny Inference Benchmark

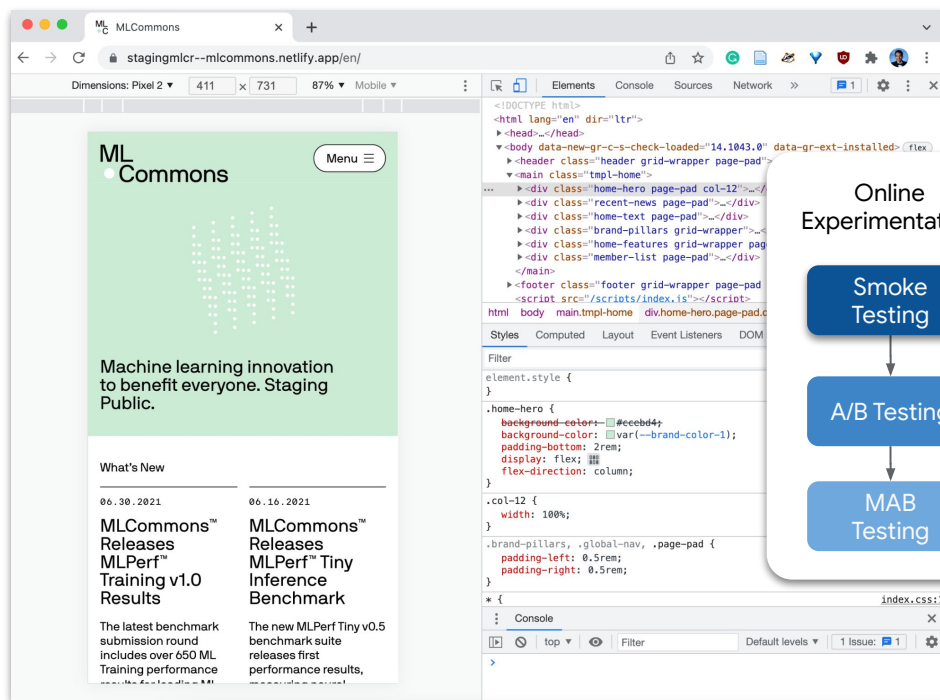
The new MLPerf Tiny v0.5 benchmark suite releases first performance results, representing a

Online Experimentation

Smoke Testing

A/B Testing

MAB Testing

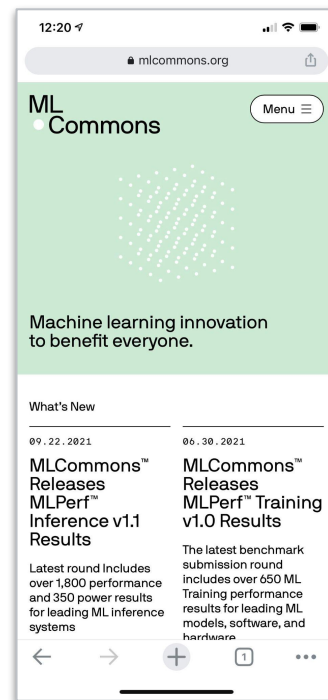


Online
Experimentation

Smoke
Testing

A/B Testing

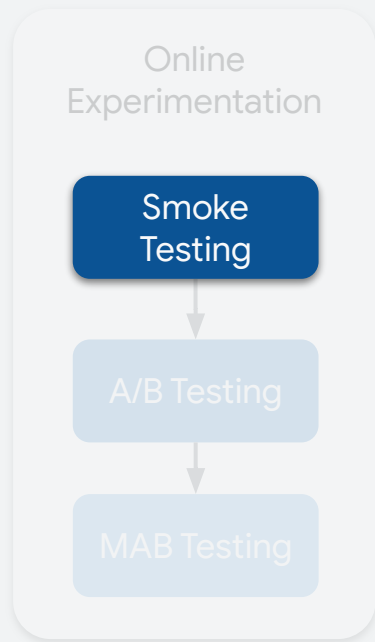
MAB
Testing



Release

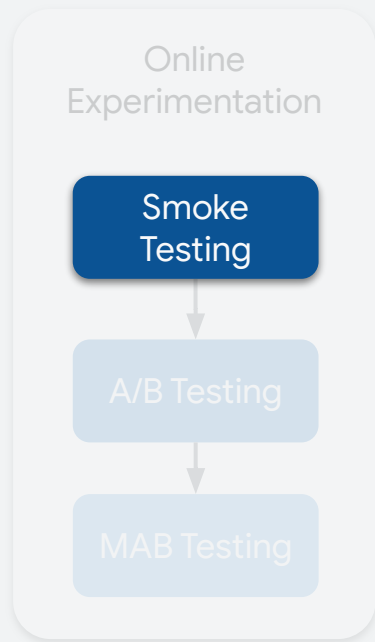
TinyML Production Deployment Questions

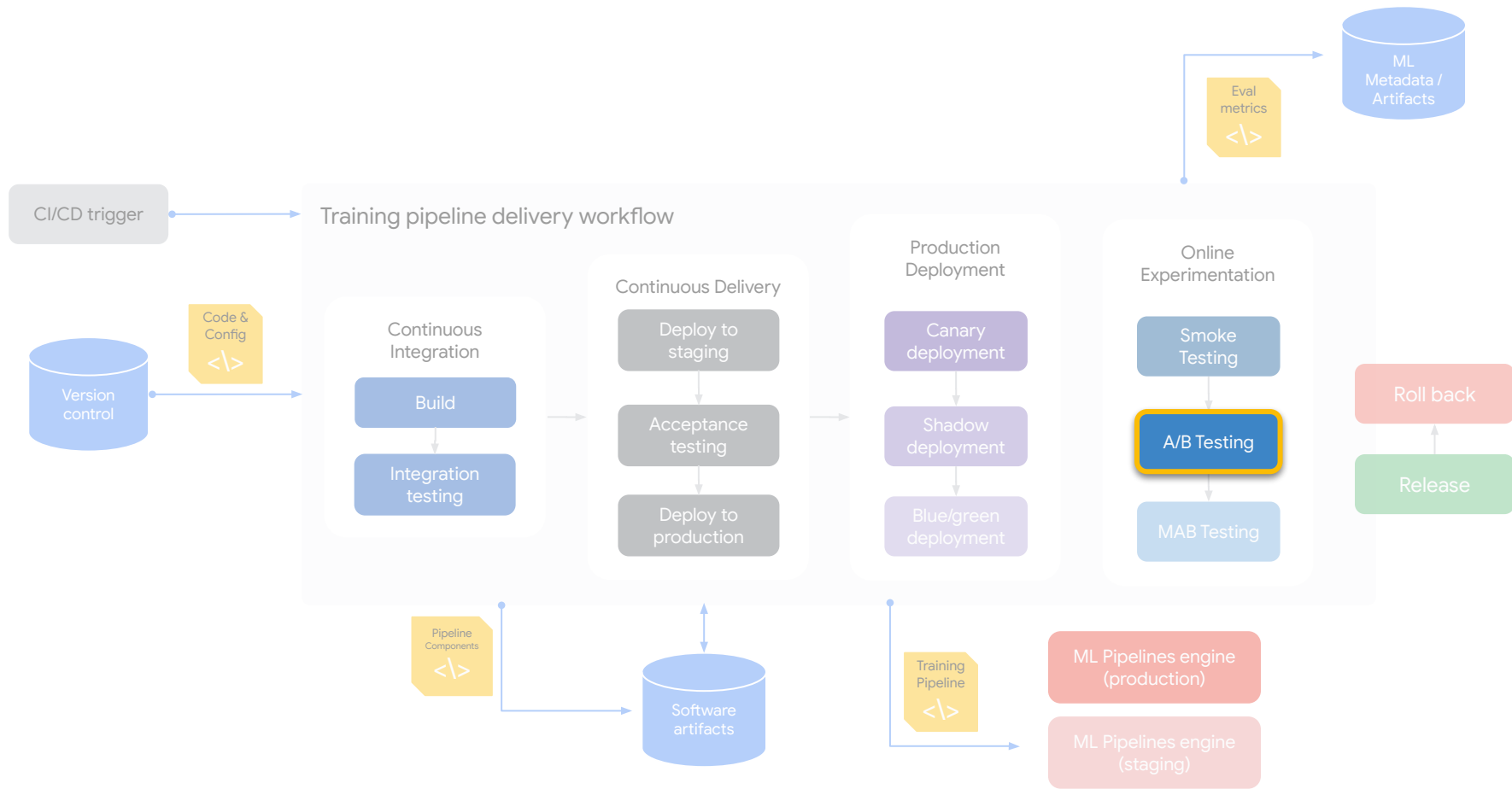
- What does it mean to do a smoke test for ***embedded*** machine learning systems?
- How can you do a production release with **TinyML** devices?



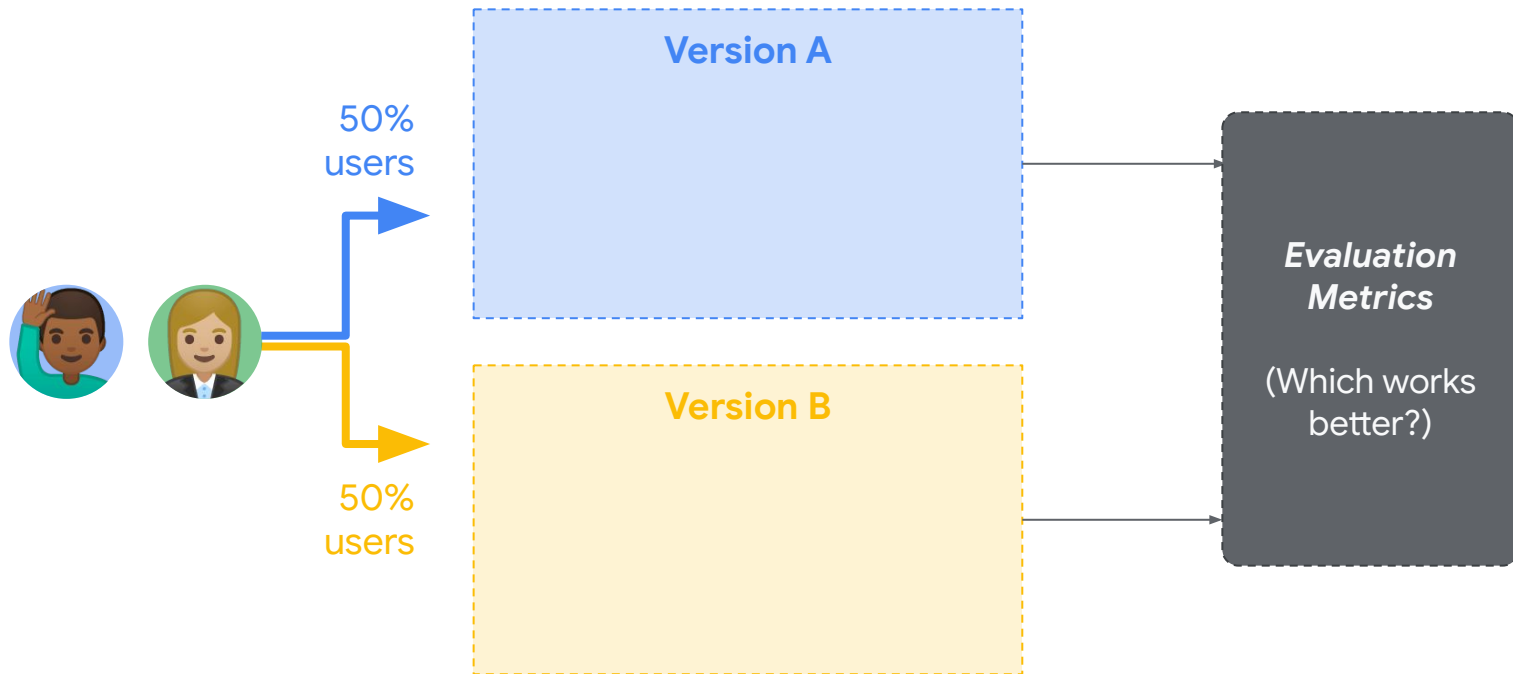
TinyML Production Deployment Questions

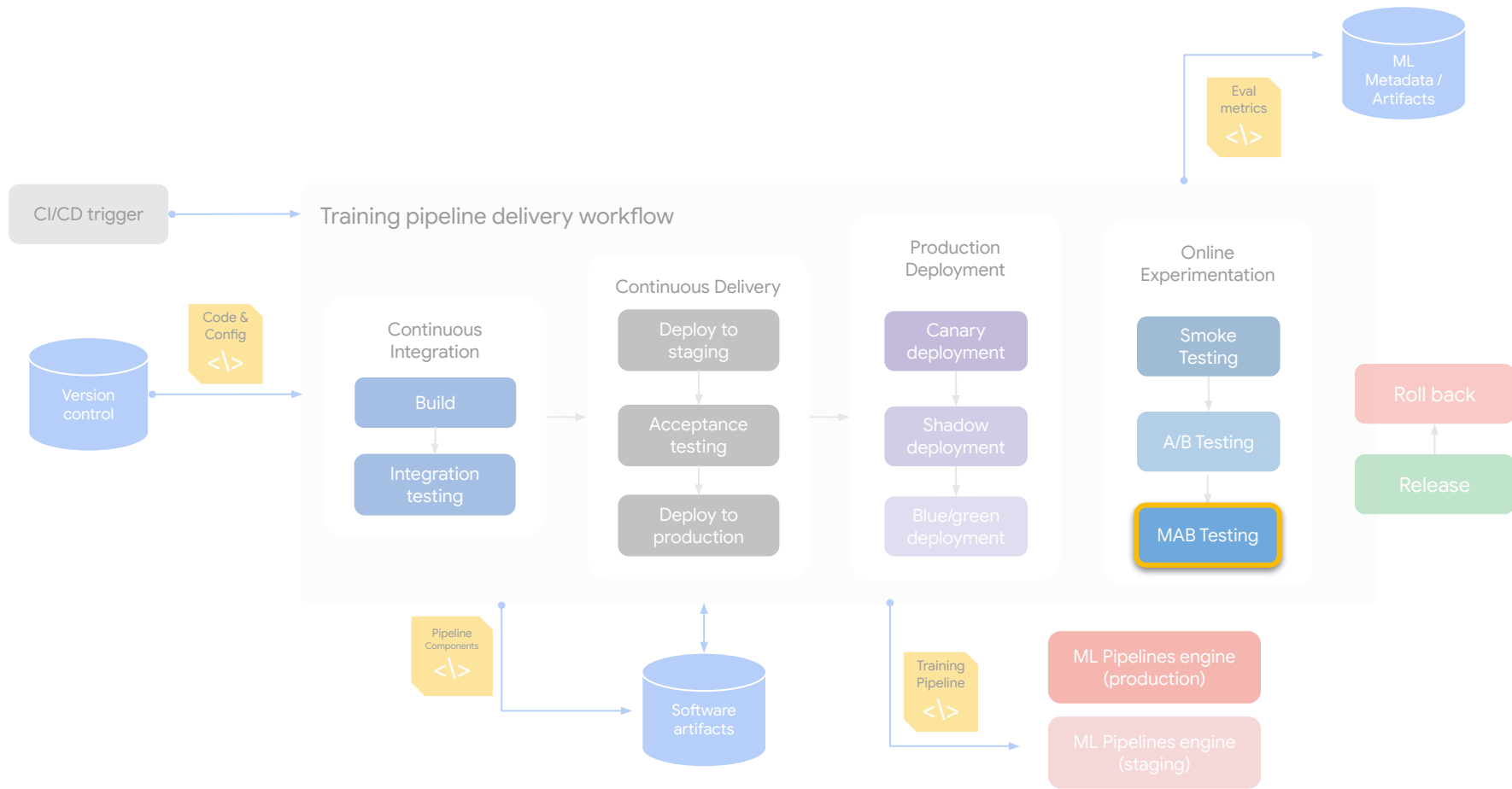
- **Recall:** what should we test?
 - Code
 - Model
 - Data
 - Sensors





A/B Testing





Challenges for TinyML



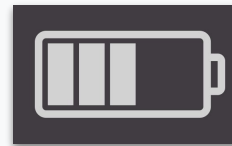
Connectivity



Latency



Limited Devices



Battery

Release Strategy

- **Controlled** strategy for rolling out the models into **production**
- Need to be **robust** for fail-safe
- Important to have some **rollback strategy** for audit

