KoliBri - Public UI

The accessible web components

Informationstechnikzentrum Bund (ITZBund)

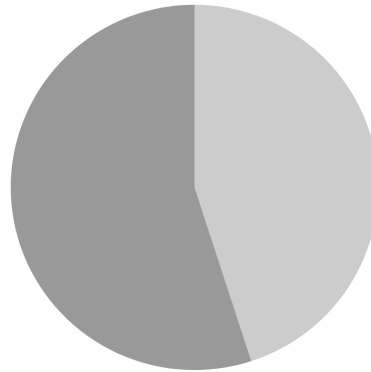
- *"Federal Information Technology Center"*
- Central IT service provider of the federal government
- Head: Dr. Alfred Kranstedt
- 4,200 employees
- 12 locations in Germany

Requirements analysis and software design

- Unit with over 50 employees
- Head: Christine Heinrich

Speaker

- My name is **Martin** Oppitz.
- **Biography:**
  - More **than 25 years** of experience in web development
  - **Computer science studies**, own small business and private companies
  - Now I am working at the **ITZBund** since **3 years**



RED-GREEN VISION DEFICIENCY

Is the red or green chart segment larger?

Accordion 1

Accordion 2

Disabled Accordion

> ## EVERYTHING IN THE SHEETICK?
>
> Visual field impairments can occur in just one eye or in both eyes?

Component-Library for the Accessiblity

(**Ko**mponenten-Bib**li**othek für die **B**ar**ri**erefreiheit)

Component-Library for the Accessiblity

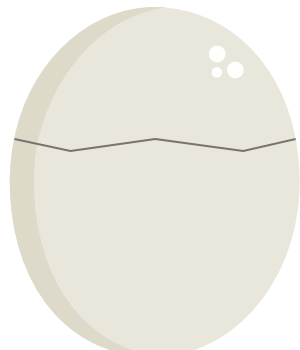
(**Ko**mponenten-Bib**li**othek für die **B**ar**ri**erefreiheit)

KoliBri

From **Egg** to **Open Source** Standard

What are the following questions we want to get to the bottom of?

- What is the **motivation** for KoliBri?
- What is the **problem**?
- What is a **Web Component**?
- Why is KoliBri so **flexible**?
- Where is something **saved** here?
- Which components **already exists**?
- What is behind the **license EUPL**?



Motivation

// What goals can be pursued with this?

- Legal requirement to create accessible user interfaces.
- majority of component libraries have focus on design
- requirements are implemented again and again in projects
- Reduction of vendor dependency (digital sovereignty)

Objective: To create an accessible and reusable standard library without losing the necessary flexibility and design freedom.

Many roads lead to Rome

// What is the problem?

Accessible user interfaces are realized by semantically correct composition of HTML elements.

However, the HTML web standard leaves the **how** open. Thus, the task of solving the "problem" lies with the developers. Furthermore, the guidelines of the WCAG have to be combined with the design aspects from the versatile style guides.

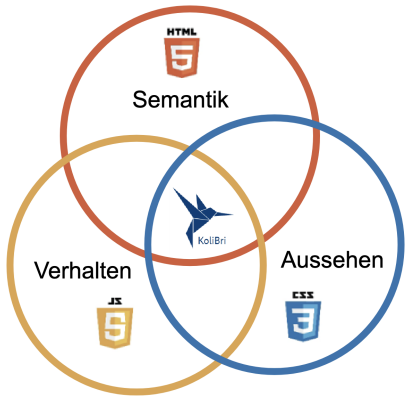
The **great advantage for the federal administration** is that we can **implement**, **reuse** (share), **improve** and **enhance** a solution **ideal** for us together by means of the Web Component standard.

Web Components

// What is a Web Component?

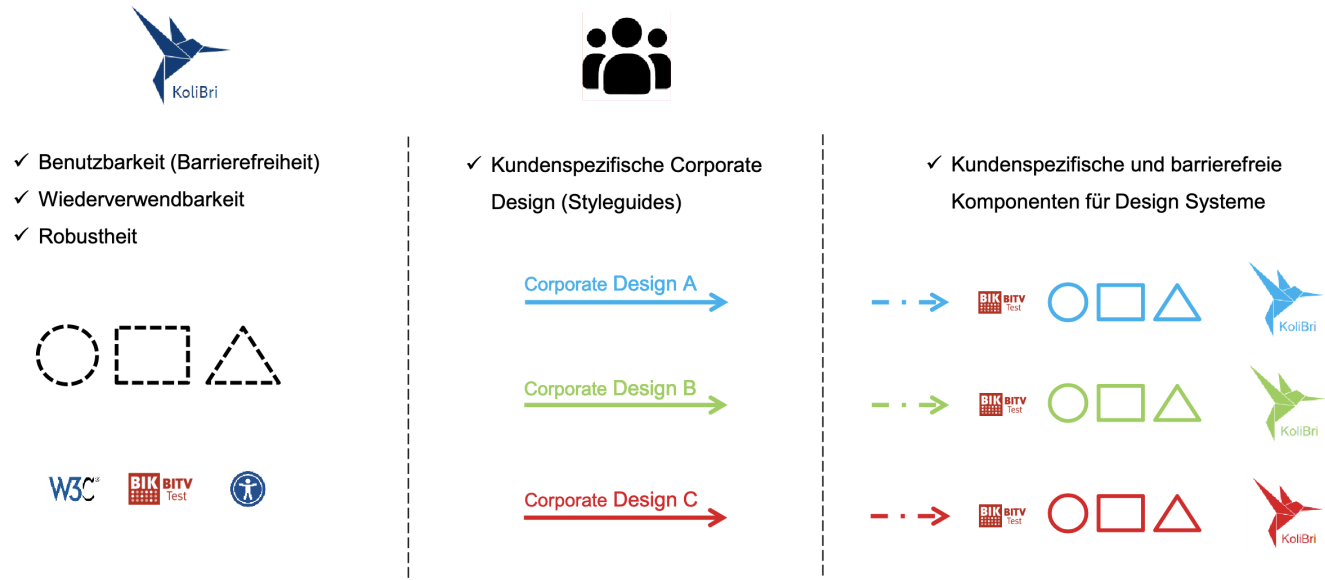
Web pages are implemented with HTML elements.

- **Web Components** standard allows to define **own** HTML element.
- This is **fixed**
  - Semantics (HTML) → Assistive Systems / Accessibility.
  - Behavior (JavaScript) → Usability & Accessibility
- This is **flexible**
  - Appearance (CSS) → Corporate Design
- this creates accessible, robust and reusable "building blocks



Theming

// How is KoliBri positioned?

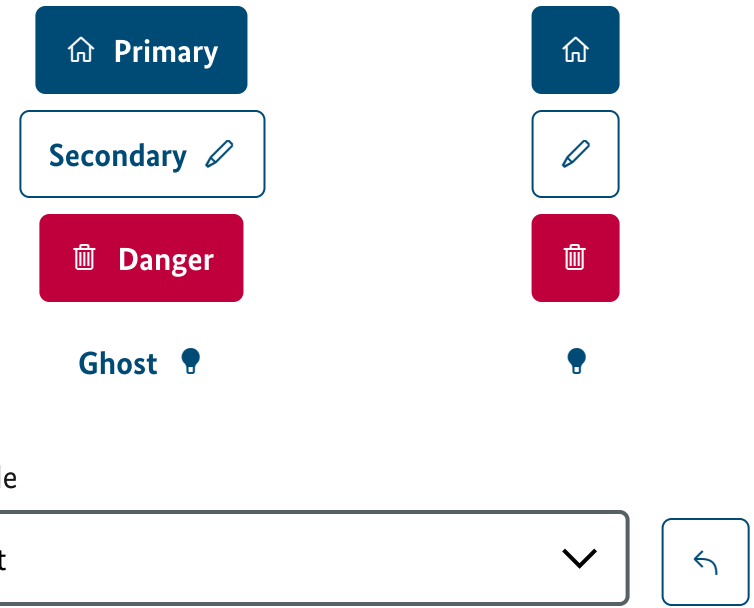


Live-Demo

// Where is anything saved here?

The code example shows how the accessibility requirements are "encapsulated away" in the button.

```
<kol-button _icons="ui-home" _icon-only _label="Primary">
 <button aria-labelledby="574540" class="primary" type="button">
    <span>
      <kol-icon>
        <i aria-hidden="true" class="icofont-ui-home"></i>
      </kol-icon>
    </span>
 </button>
 <kol-tooltip>
    <kol-badge id="574540">
      <span>Primary</span>
    </kol-badge>
 </kol-tooltip>
</kol-button>
```



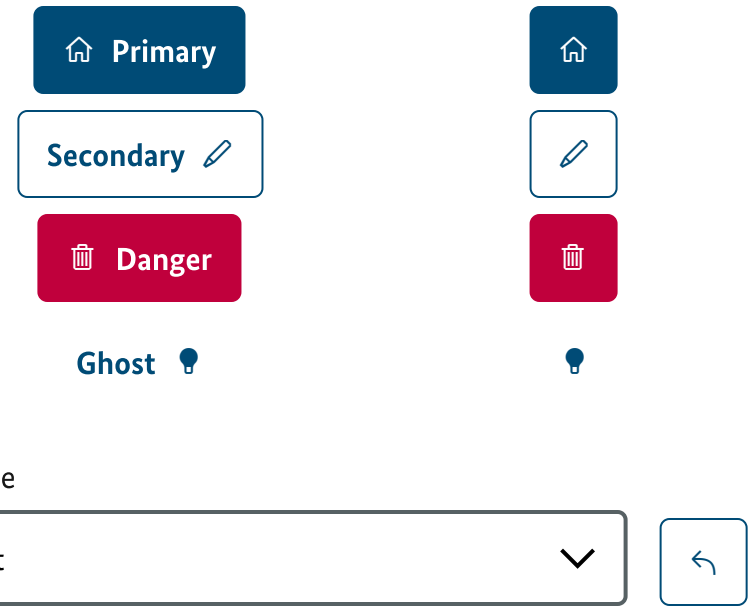
* Source code is greatly simplified for better Comprehensibility.

Live-Demo

// Where is anything saved here?

The code example shows how the accessibility requirements are "encapsulated away" in the button.

```
<kol-button _icons="ui-home" _icon-only _label="Primary">
 <button aria-labelledby="574540" class="primary" type="button">
    <span>
      <kol-icon>
        <i aria-hidden="true" class="icofont-ui-home"></i>
      </kol-icon>
    </span>
 </button>
 <kol-tooltip>
    <kol-badge id="574540">
      <span>Primary</span>
    </kol-badge>
 </kol-tooltip>
</kol-button>
```



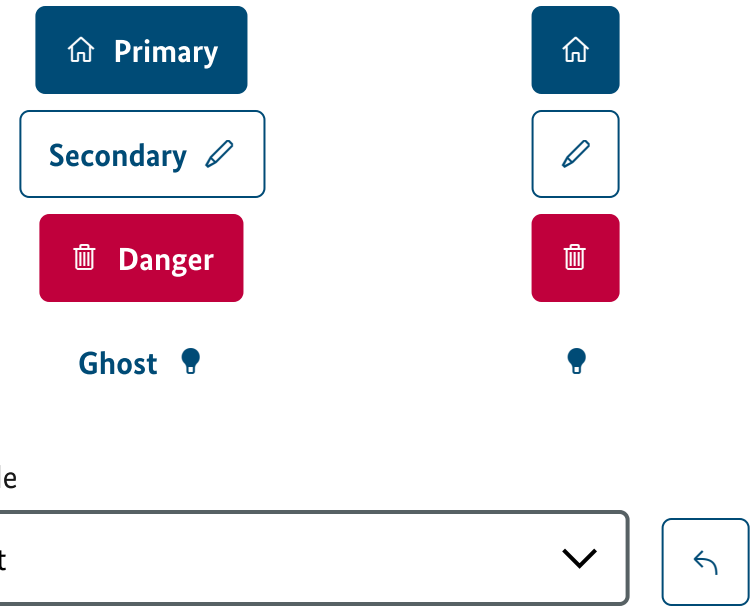
* Source code is greatly simplified for better Comprehensibility.

Live-Demo

// Where is anything saved here?

The code example shows how the accessibility requirements are "encapsulated away" in the button.

```
<kol-button _icons="ui-home" _icon-only _label="Primary">
 <button aria-labelledby="574540" class="primary" type="button">
   <span>
     <kol-icon>
       <i aria-hidden="true" class="icofont-ui-home"></i>
     </kol-icon>
   </span>
 </button>
 <kol-tooltip>
   <kol-badge id="574540">
     <span>Primary</span>
   </kol-badge>
 </kol-tooltip>
</kol-button>
```



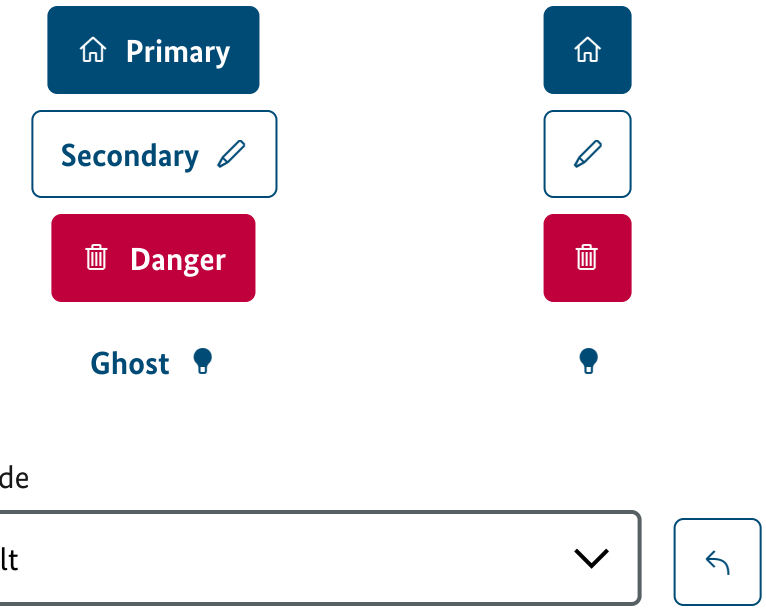
* Source code is greatly simplified for better Comprehensibility.

Live-Demo

// Where is anything saved here?

The code example shows how the accessibility requirements are "encapsulated away" in the button.

```
<kol-button _icons="ui-home" _icon-only _label="Primary">
 <button aria-labelledby="574540" class="primary" type="button">
   <span>
     <kol-icon>
       <i aria-hidden="true" class="icofont-ui-home"></i>
     </kol-icon>
   </span>
 </button>
 <kol-tooltip>
   <kol-badge id="574540">
     <span>Primary</span>
   </kol-badge>
 </kol-tooltip>
</kol-button>
```



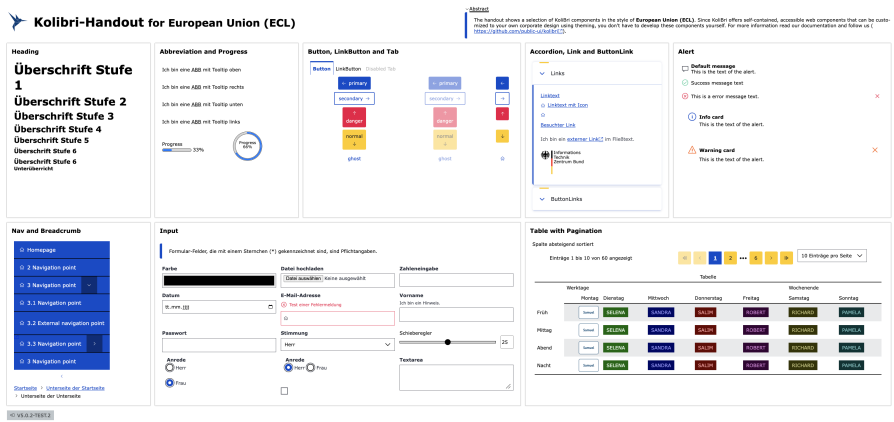
* Source code is greatly simplified for better Comprehensibility.

Component diversity

// What is the benefit of the component diversity?

The **component diversity** is the **key** to the **flexibility** of KoliBri.

- ... are **small** and **reusable**.
- ... can be **combined** with other.
- ... can be **extended**.
- ... can be **replaced**.
- ... can be **styled**.



Unique selling proposition

// What actually makes the difference?

From a public administration perspective, KoliBri has a number of unique selling points:

- **Accessibility** - comes first and before design.
- **Architecture** - universally applicable on the web.
- **Reusability** - small-scale and designable
- **Digital sovereignty** - code sovereignty lies with us
- **Robust** - protected from manipulation

License

// What is behind the EUPL license?

The "European Union Open Source License" (EUPL) is a copyleft license issued by the European Union for licensing free software.

- The pure use of artifacts is completely **unproblematic**.
- Copying code is protected by the license (**copyleft**)!

EUPL ensures free use and copyright protection.

Outlook

// Where to go with KoliBri?

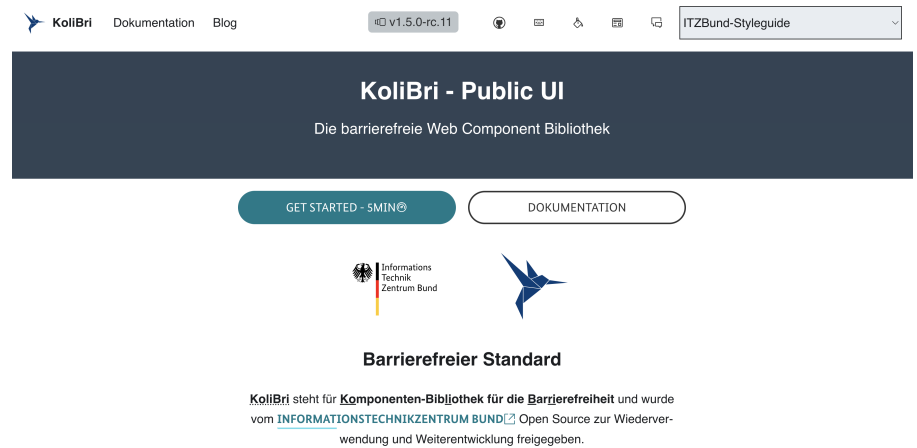
Several design systems (e.g. **DeSyBri** and **KERN**) are already implemented on the basis of **KoliBri**. All existing components can be used and extended by own larger components.

The graphical design is done with the help of theming. For this the designer or also pure CSS, SCSS etc. can be used.

KoliBri is continuously developed further. Likewise innovations in the regulations (e.g. WCAG, EN and BITV) are constantly incorporated and checked by our experts for accessibility. The requirements of the federal administration and the open source community are taken into account.

Next steps

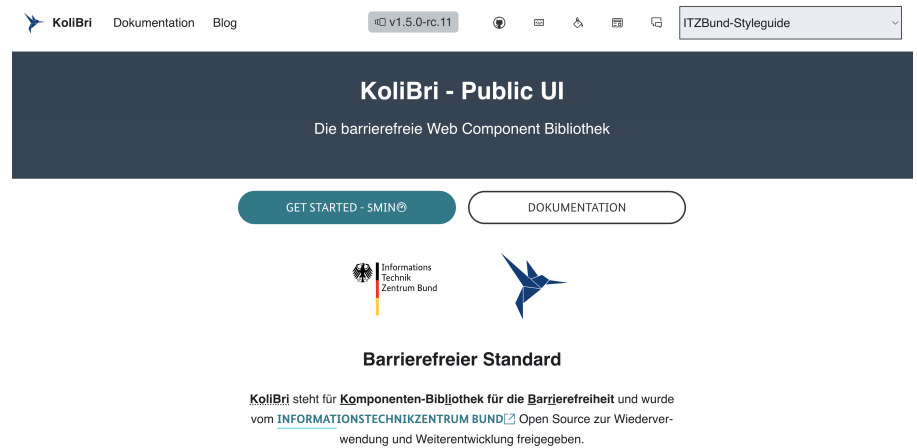
Here’s what you can do to get to know **KoliBri** ...



Next steps

Here’s what you can do to get to know **KoliBri** ...

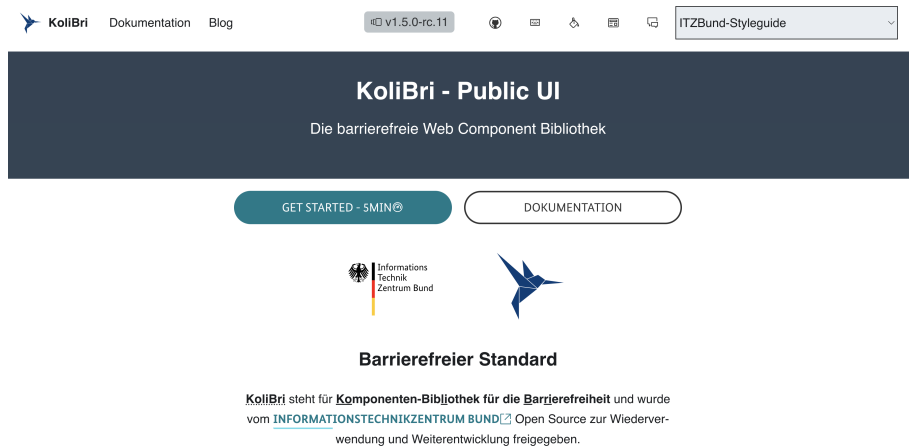
- Read more about KoliBri (Documentation)



Next steps

Here’s what you can do to get to know **KoliBri** ...

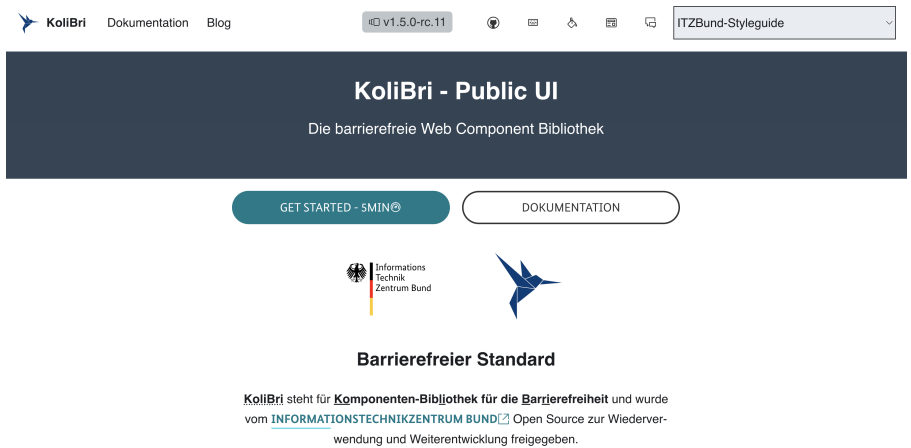
- Read more about KoliBri (Documentation)
- Try KoliBri (Create app)



Next steps

Here’s what you can do to get to know **KoliBri** ...

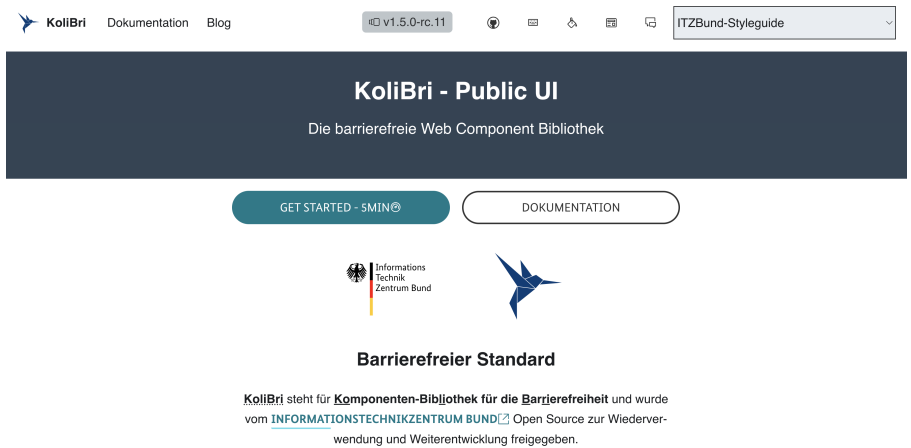
- Read more about KoliBri (Documentation)
- Try KoliBri (Create app)
- Use KoliBri in your design system (utility)



Next steps

Here's what you can do to get to know **KoliBri** ...

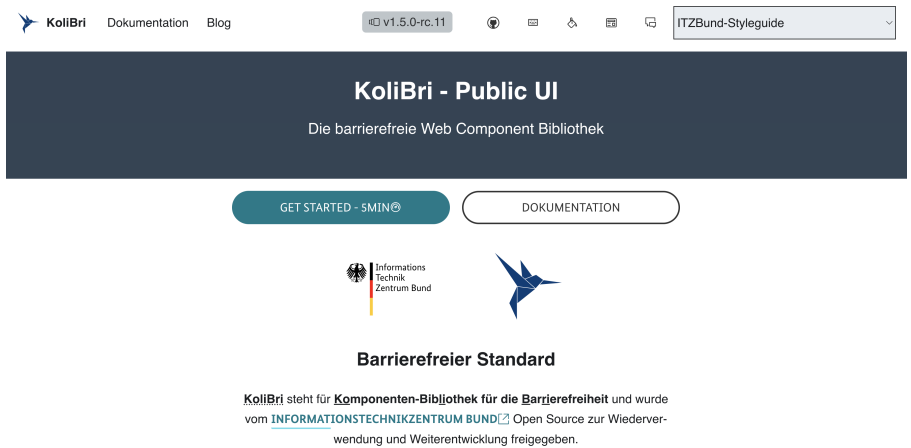
- Read more about KoliBri (Documentation)
- Try KoliBri (Create app)
- Use KoliBri in your design system (utility)
- Create your own KoliBri (Designer)



Next steps

Here’s what you can do to get to know **KoliBri** ...

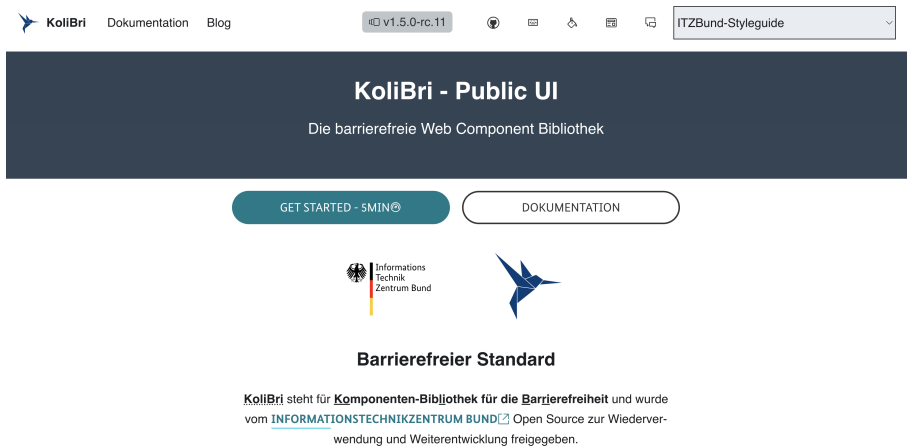
- Read more about KoliBri (Documentation)
- Try KoliBri (Create app)
- Use KoliBri in your design system (utility)
- Create your own KoliBri (Designer)
- Learn by example (Samples)



Next steps

Here’s what you can do to get to know **KoliBri** ...

- Read more about KoliBri (Documentation)
- Try KoliBri (Create app)
- Use KoliBri in your design system (utility)
- Create your own KoliBri (Designer)
- Learn by example (Samples)
- Follow and share us (Follow button)



`On Dec. 9, 1968, Doug Engelbart`

NOW, WE CAN MAKE OUR WEB PRODUCTS **ACCESSIBLE** TO **EVERYONE**.

Thank you for your attention

// Let's make KoliBri more colorful and better together!

Documentation | kolibri@itzbund.de | GitHub

Informations
Technik
Zentrum Bund