

Tell, don't show

Optimize the Text-To-Speech experience for blind users

About me

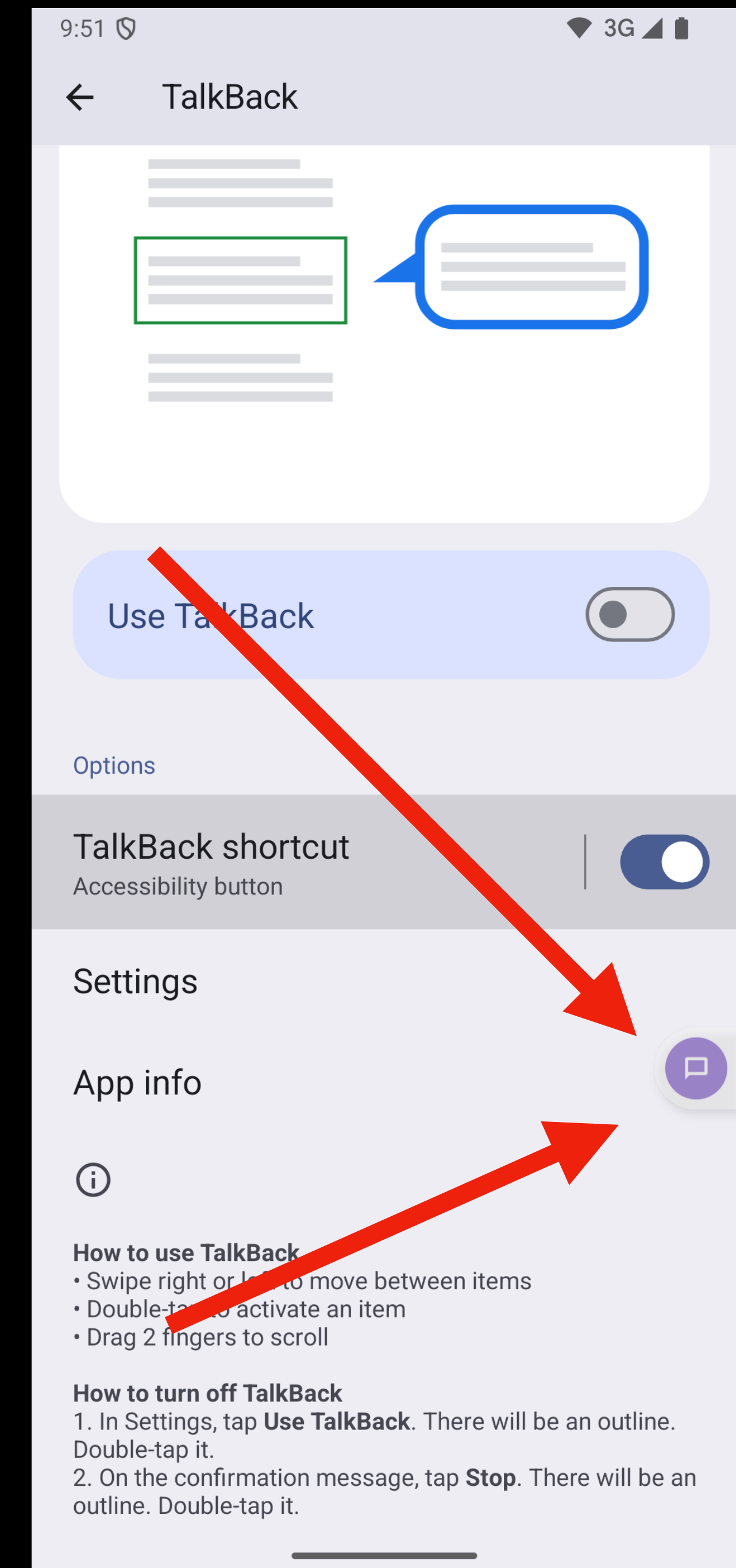
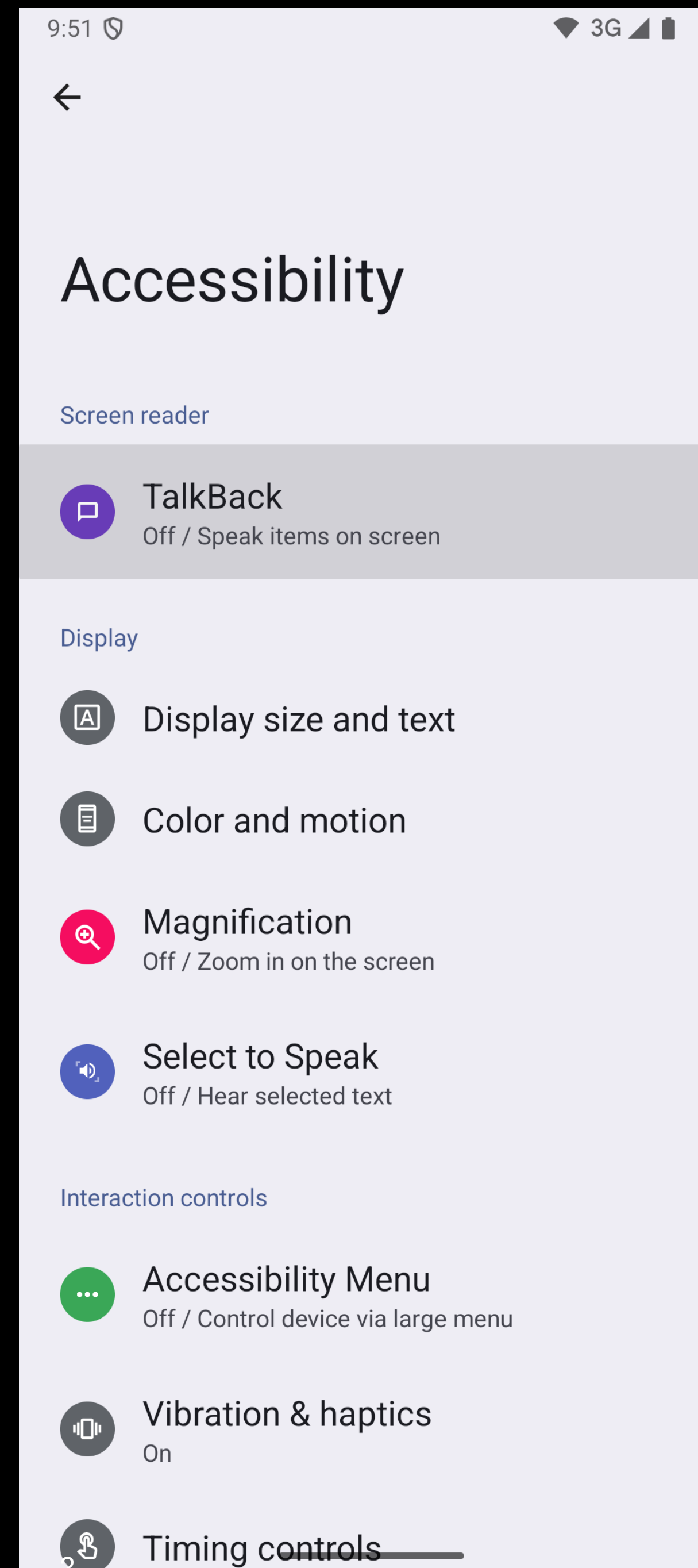
- **Alexander Hoffmann**
- **Freelance Android developer**
- **Had some fun with TalkBack recently**

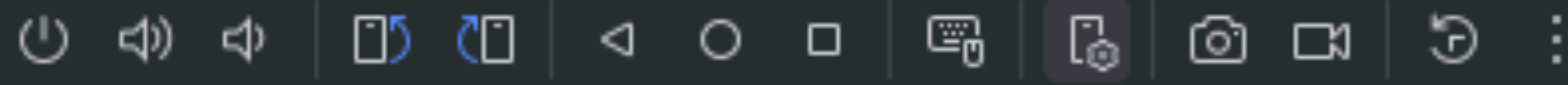


September 25th 2025 - Droidcon Berlin 2025 - Lightning Talk

TalkBack

- Default screenreader for Android (should be preinstalled)
- Part of the Android Accessibility Suite
 - Available on Play Store
- Can be updated independently from the OS





Device UI Shortcuts

Device Settings

Reset

Dark Theme: ☐

Navigation Mode: Buttons v

TalkBack: ☐

Select to Speak: ☐

Font Size:

Display Size:

Show Layout Bounds: ☐

Demo

- Headlines aren't semantically headlines
- Talkback can navigate between headlines to explore the content of screens

```
Text(  
    modifier = Modifier.semantics {  
        heading()  
    },  
    ...  
)
```

Personal Data

Name

Alexander Hoffmann

Birthday

01/06/1990

- App is not localized, including date
- Seeing users will recognize from context, that this is written as month/day/year -> **6th of January 1990**
- German TalkBack will read this as 1st of June 1990

Personal Data

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Birthday	01/06/1990

- Error is not emphasized as an error
- It is red for seeing users -> Red means „Error“
- Should be emphasized for the screenreader

```
Modifier.semantics { contentDescription = "Error" }
```

- Missing click label on the payment info and error „Double tap to activate“
- Fix to: „Double tap to edit payment info“

```
Modifier.clickable(onClickLabel = "edit payment info")
```


- The custom notification is not read by TalkBack

```
Modifier.semantics { liveRegion = LiveRegionMode.Polite }
```

- ZIP code is read out as single number: Fourteen thousand fifty five

```
val addressText = buildAnnotatedString {  
    append( "${uiState.address}\n" )  
    withAnnotation(VerbatimTtsAnnotation(uiState.zipCode)) {  
        append(uiState.zipCode)  
    }  
    append( " " )  
    append(uiState.city)  
}
```

- Label and value are read separately
 - Which is *OK*, but logically, the label could / should be read with the corresponding value
- We can merge semantics from multiple composables:

```
Modifier.semantics(mergeDescendants  
= true) {}
```

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Birthday	01/06/1990

```

@Composable
fun ProfileDataRow(
    ...
) {
    Row(
        modifier = modifier
            .fillMaxWidth()
            .semantics(mergeDescendants = true) {},
        horizontalArrangement =
Arrangement.Absolute.SpaceBetween
    ) {
        Text(text = label)
        Text(text = value, textAlign = TextAlign.End)
    }
}

```

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- Payment info click is not accessible anymore 😞
- Container needs at least one child with semantics
- OR: Just overwrite semantics altogether

```
Modifier.clearAndSetSemantics {  
    contentDescription = "Bank account with „  
    +“IBAN starting with DE49, ending with 53”  
}
```


- The order of Modifiers is important!
- `clearAndSetSemantics` clears everything that comes **After**

```
// Don't!  
Modifier.clearAndSetSemantics {  
    contentDescription = "..."  
}.clickable(onClickLabel = "...") {  
    ...  
}
```

```
// Yes!  
.clickable(onClickLabel = "...") {  
    ...  
}  
.clearAndSetSemantics {  
    contentDescription = "..."  
}
```

Common Problems

- Emulators don't like switching audio devices on the host system
- Will stay on audio device which was enabled when emulator was started
- Also after you sleep / wake up your host device 🙄
- When you don't hear anything -> Reboot the emulator
- When you hear something but can't adjust the volume via the host system -> Reboot the emulator

Common Problems

- Input focus (keyboard) changes TalkBack behavior
- It might appear that TalkBack focuses the wrong elements first (interactive elements)
- More info about focus:
Talk from Droidcon Berlin 2025 „It's All About Focus - and Accessibility“ by Eeva-Jonna Panula

What we did

- Added headings
- Added click labels
- Merged composables semantically
- Improved text-to-speech output for ZIP code & redacted IBAN
- Improved error message
- Notified about changed UI (Notification)

hypar.de/posts/tell-dont-show

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