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EUDI WALLET DESIGN GUIDE

FOR THE EUDI WALLET ECOSYSTEM

November 2023

v1.0.0

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9 This is a working document that holds no legal value and does not reflect any common agreement or
10 position of the co-legislators. It presents a state-of-play of ongoing work of the eIDAS Expert Group. This
11 document is being continuously updated and should not be considered final.

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77 2 INTRODUCTION

78

79 2.1 PURPOSE OF THE DESIGN GUIDE

80 This design guide outlines the principles, guidelines, and best practices for creating consistent and
81 effective design solutions for the EUDI wallet. The purpose of a design guide is to ensure that all design
82 work produced by a team or across different teams is consistent, coherent, adheres to certain standards
83 and aligns with the overall goals and values of the project.

84

85 As many sections will be subject to national implementation this document includes guidelines to assist
86 in creating a user interface that is useful, usable, and enjoyable to use. It also provides specific
87 instructions and tips for creating accessible and inclusive designs.

88

89 2.2 BOUNDARIES OF THE DESIGN GUIDE

90 It shall be highlighted that this design guide does not aim to provide detailed design elements to be
91 adopted by national EUDI Wallet implementations. Overall, the objective of the EUDI Wallet Design
92 Guide is to:

- 93 - Identify key design principles and provide guidelines against these design principles;
- 94 - Identify specific areas of the EUDI Wallet for which design principles are considered important
95 and expand on those in future iterations of the EUDI Wallet Design Guide.

96

97 The design guidelines listed in this document shall not be considered as mandatory towards the
98 implementations of the EUDI Wallet, but rather stand as recommendations to ensure a common user
99 experience across the different national implementations.

100

101 2.3 IMPORTANCE OF DESIGN CONSISTENCY

102 UI (User Interface) consistency is important because it provides a better user experience and helps users
103 navigate a mobile application more easily. When elements such as icons, colours, and fonts are
104 consistent throughout an application, users can quickly learn how to use it and understand the
105 application's intention.

106

107 Familiarity:

108 Consistent UI elements give users a sense of familiarity and they can feel more comfortable using the
109 application. If the user interface changes too often, it can cause confusion and frustration.

110

111 Efficiency:

112 Consistency in the user interface can make navigation easier and more efficient. Users will know where
113 to find the features they need, and they reduce cognitive load.

114

115 Accessibility:

116 Consistent UI elements make it easier for users with disabilities to navigate the application. Users with
117 visual impairments, for example, can more easily use screen readers when consistent UI elements are
118 used.

119

120 Overall, UI consistency is an essential aspect of good user interface design. It makes the application
121 more user-friendly, efficient, and accessible.

122

123 2.4 OVERVIEW OF DESIGN CRITERIA

124 Twelve design criteria have been selected which we go over in details in 'Section 2'. The first 10 are the
125 [usability heuristics from the Nielsen Norman group](#)¹. They are called "heuristics" because they are broad
126 rules of thumb and not specific usability guidelines. These are used to evaluate a User Interface, so it is
127 good to have them as guiding principles during the design phase as well. These 10 principles are:

128

- 129 • Visibility of system status
- 130 • Match between system and the real world
- 131 • User control and freedom
- 132 • Consistency and standards
- 133 • Error prevention
- 134 • Recognition rather than recall
- 135 • Flexibility and efficiency of use
- 136 • Aesthetic and minimalist design
- 137 • Help users recognize, diagnose, and recover from errors
- 138 • Help and documentation

139

140 An additional 2 were added to address these important areas:

- 141 • Accessibility
- 142 • Writing

143

144

¹ <https://www.nngroup.com/articles/ten-usability-heuristics/>

145 3 DESIGN CRITERIA

Disclaimer: The design guidelines listed in this document shall not be considered as mandatory towards the implementations of the EUDI Wallet, but rather stand as recommendations to ensure a common user experience across the different national implementations. Any design elements included in the following chapter are indicative and are only used to better illustrate the corresponding design criteria.

146

147 3.1 VISIBILITY OF SYSTEM STATUS

! *The design should always keep users informed about what is going on through appropriate feedback within a reasonable amount of time*

148

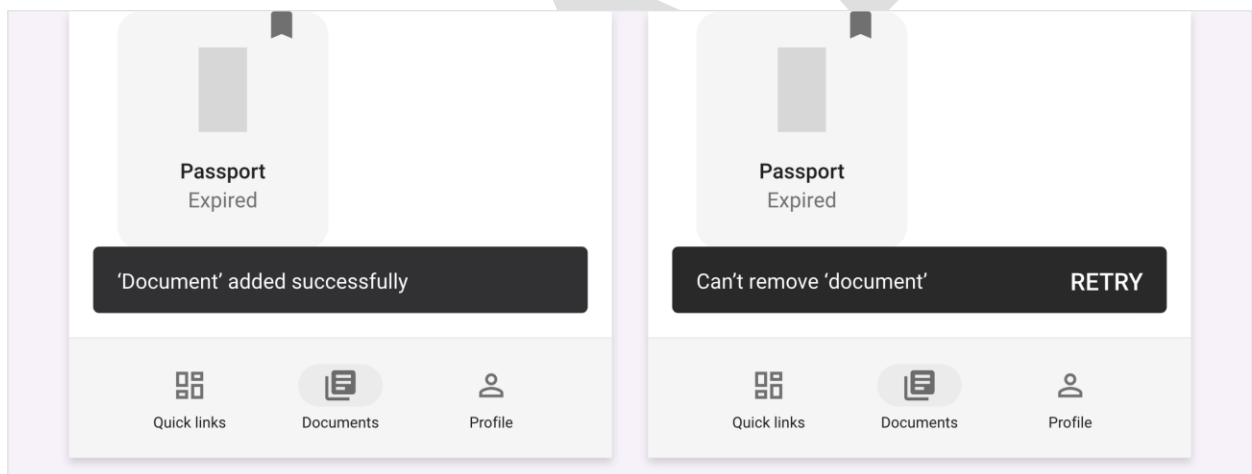
149 3.1.1 INDICATIVE EXAMPLES

150

151 Document management

152 When adding or removing a document the application should let the user know whether the process
153 was completed successfully or not.

154



155

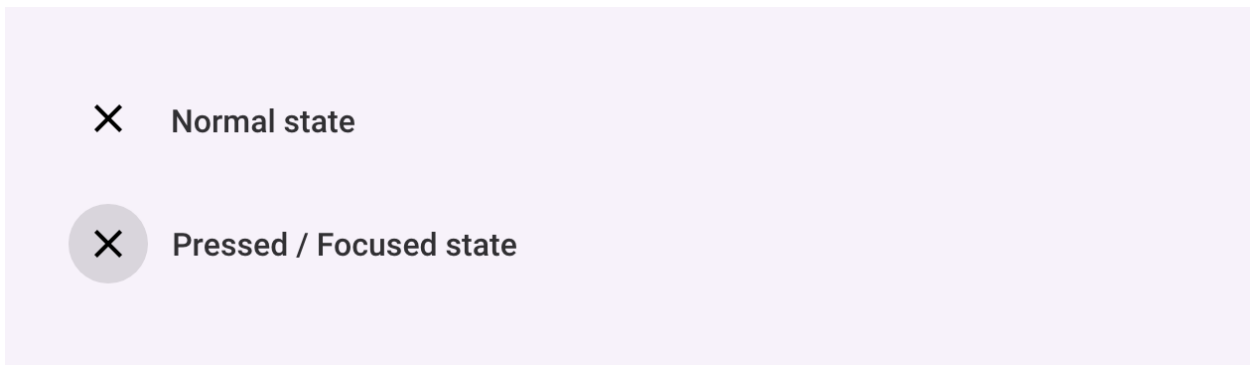
156 **FIGURE 1: DOCUMENT MANAGEMENT EXAMPLE**

157

158 **Interactive elements**

159 Interactive elements such as buttons must have a pressed and focused state.

160



161

162 **FIGURE 2: INTERACTIVE ELEMENTS EXAMPLE**

163

164 **3.2 MATCH BETWEEN SYSTEM AND THE REAL WORLD**



The design should speak the users' language. Use words, phrases, and concepts familiar to the user, rather than internal jargon. Follow real-world conventions, making information appear in a natural and logical order.

165

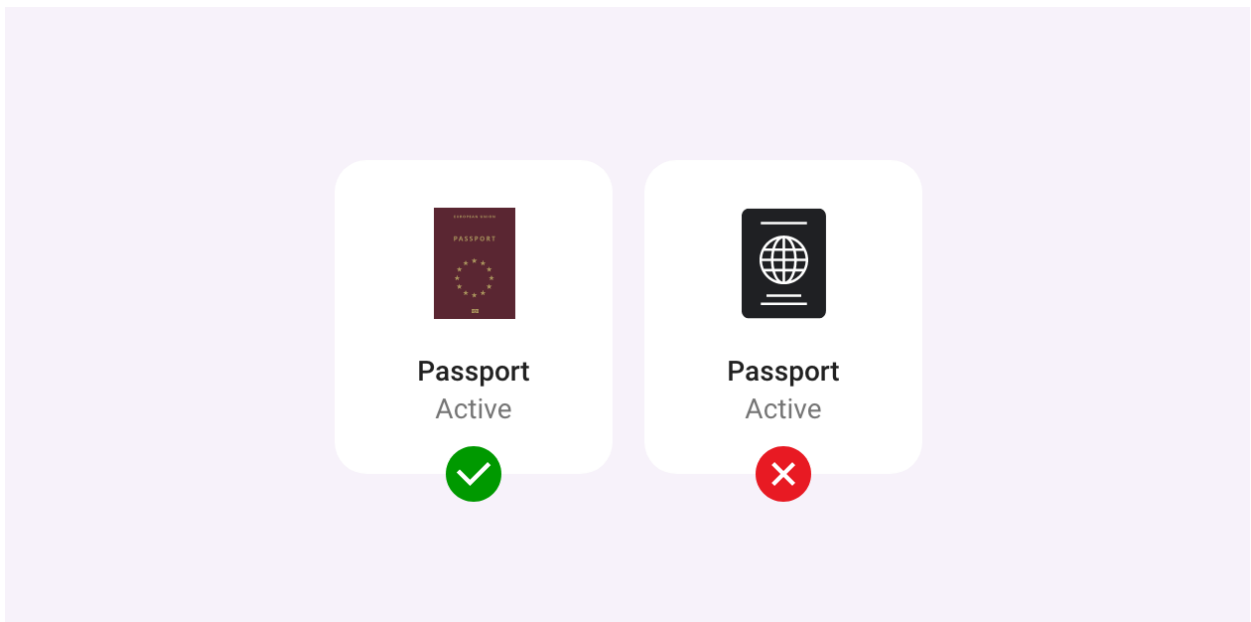
166 **3.2.1 INDICATIVE EXAMPLES**

167

168 **Document representation**

169 Documents should be (where possible) represented in the UI by what is familiar to the user instead of
170 generic / ambiguous icons.

171



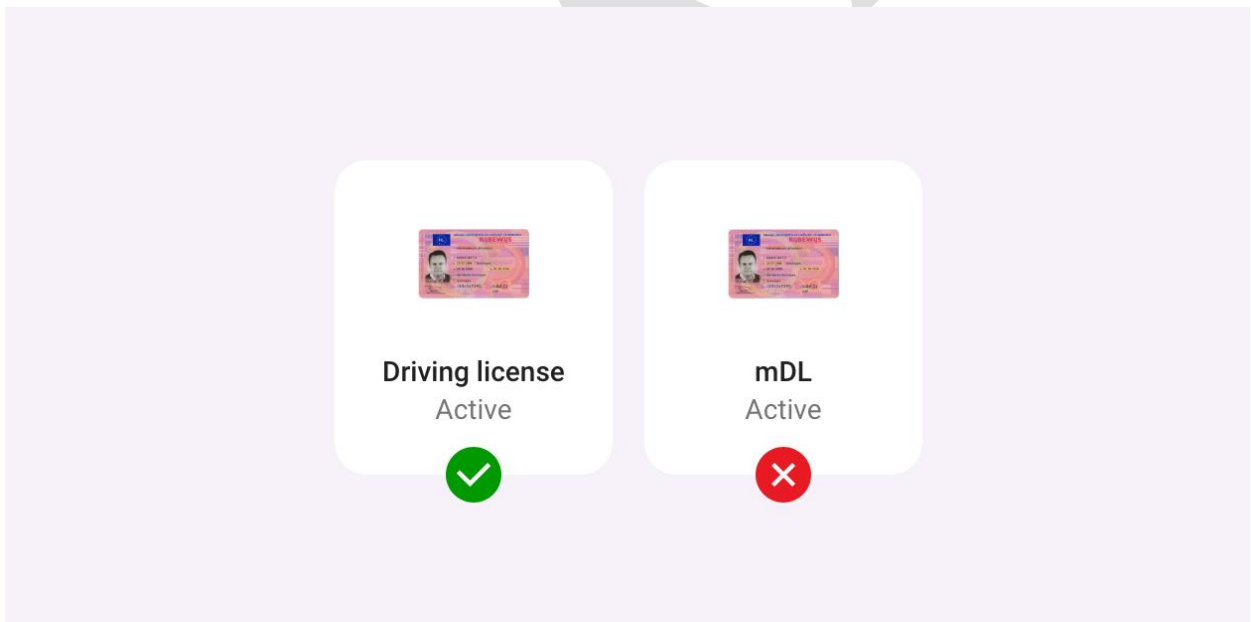
172

173 **FIGURE 3: DOCUMENT PRESENTATION EXAMPLE**

174

175 **Labels**

176 Stay away from technical terms and jargon. Use labels that people use in their everyday life.



177

178 **FIGURE 4: LABELS EXAMPLE**

179

180 **Icons**

181 People spend most of their time in other apps/websites. Use icons that are familiar and clear to them
182 instead on ambiguous ones.



183

184 **FIGURE 5: ICONS EXAMPLE**

185

186 3.3 USER CONTROL AND FREEDOM



Users often perform actions by mistake. They need a clearly marked "emergency exit" to leave the unwanted action without having to go through an extended process.

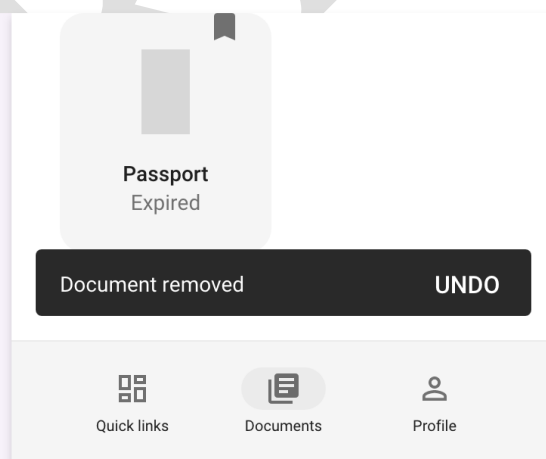
187

188 3.3.1 INDICATIVE EXAMPLES

189

190 **Undo & Redo**

191 The third principle talks about giving the freedom to the user to navigate and perform actions - for
192 instance, the freedom to undo or redo any accidental moves



193

194 **FIGURE 6: UNDO & REDO EXAMPLE**

195

196 3.4 CONSISTENCY AND STANDARDS



Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform and industry conventions.

197

198 App should follow interface standards and platform conventions. Conventions have been established
199 that users are familiar with. This knowledge should be capitalised upon to make the app have a higher
200 level of intuitiveness.

201

202 E.g. Position of menu, Navigation bar, Search location

203

204 3.5 ERROR PREVENTION



Good error messages are important, but the best designs carefully prevent problems from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

205

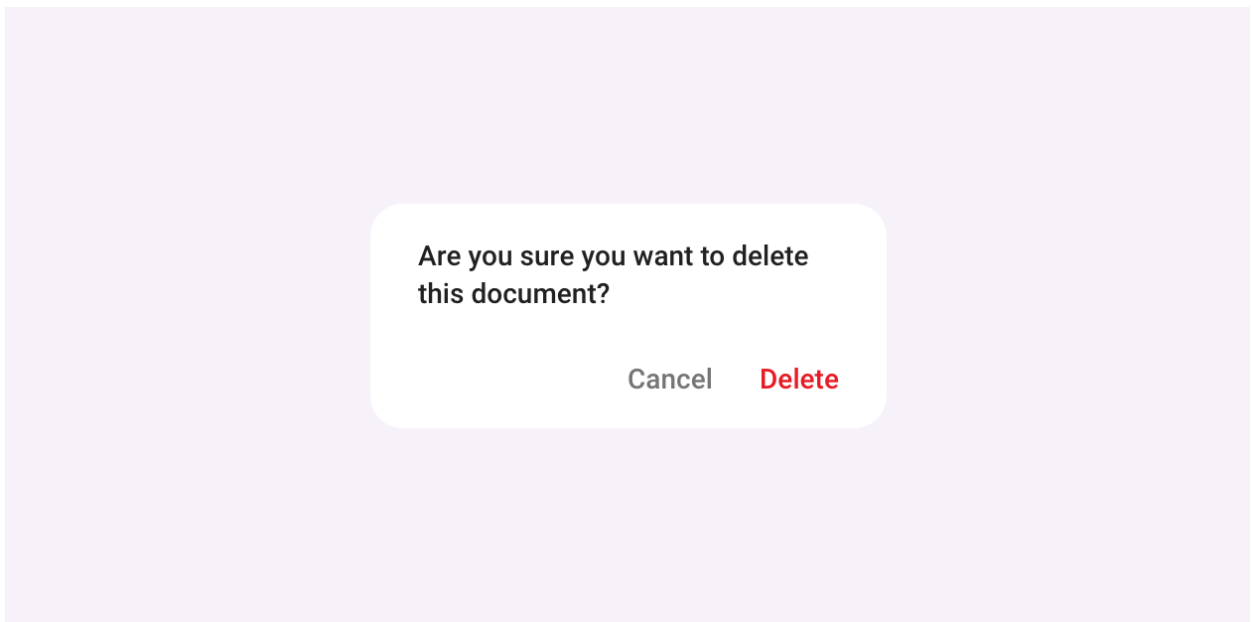
206 3.5.1 INDICATIVE EXAMPLES

207

208 **Confirmation dialogs**

209 For accidental actions such as miss-clicks

210



211

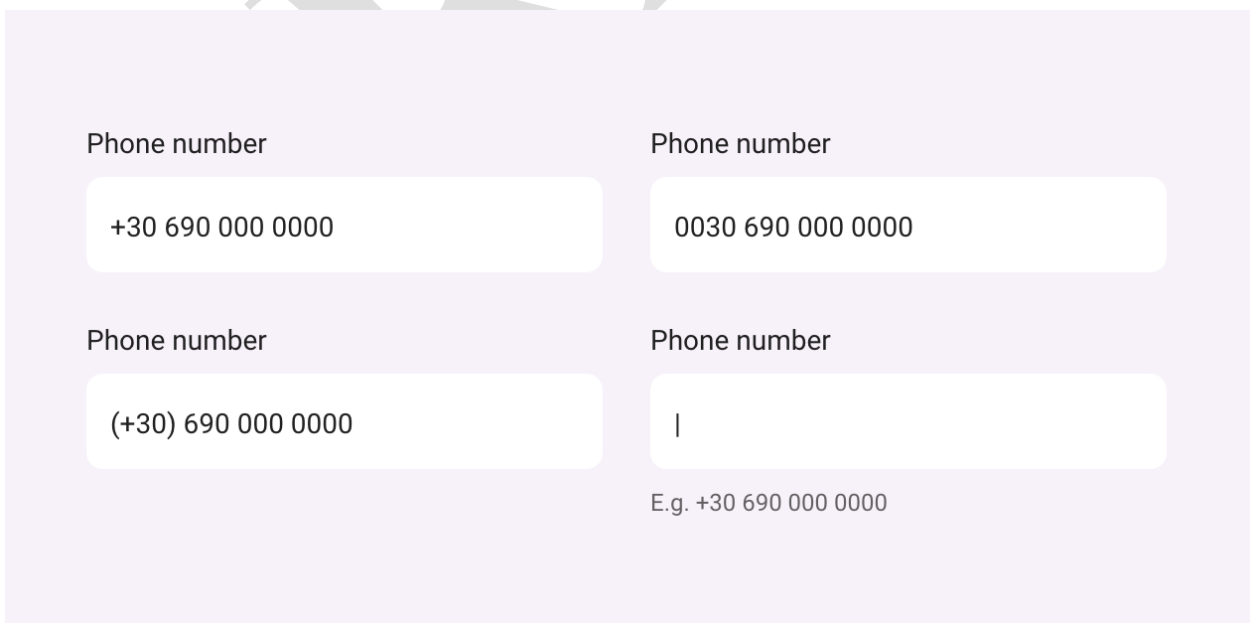
212 **FIGURE 7: CONFIRMATION DIALOGS EXAMPLE**

213

214 **Flexible inputs**

215 Flexible inputs allow people to answer questions the way they want instead of the way a database
216 requires them to. But these input fields come with a promise to users: "whatever format you choose,
217 we'll take it." For example, a phone number can be entered in various ways by different people. The
218 field can either format it accordingly on each own or provide a hint of the expected format instead of
219 producing in-line errors or result in guesswork.

220



221

222 **FIGURE 8: FLEXIBLE INPUTS EXAMPLE**

223

224 3.6 RECOGNITION RATHER THAN RECALL



Minimize the user's memory load by making elements, actions, and options visible. The user should not have to remember information from one part of the interface to another. Information required to use the design (e.g. field labels or menu items) should be visible or easily retrievable when needed.

225

226 3.7 FLEXIBILITY AND EFFICIENCY OF USE



Offer shortcuts—quick ways to get one or more tasks done with your apps. They should speed up the interaction with an app for the expert user

227

228 3.7.1 INDICATIVE EXAMPLES

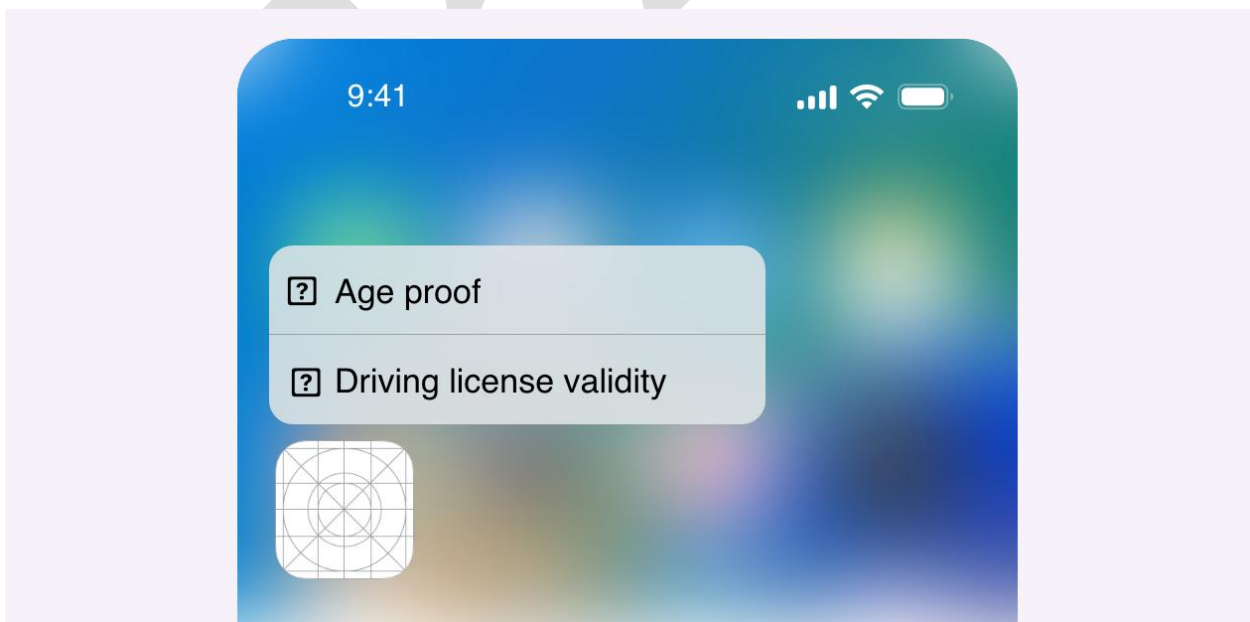
229

230 It's possible to improve the efficiency of interaction with an app for experienced users with ways that
231 will allow them to complete frequent actions faster.

232 iOS 3d touch

233 Shortcuts for quick proofs through iOS 3d touch

234



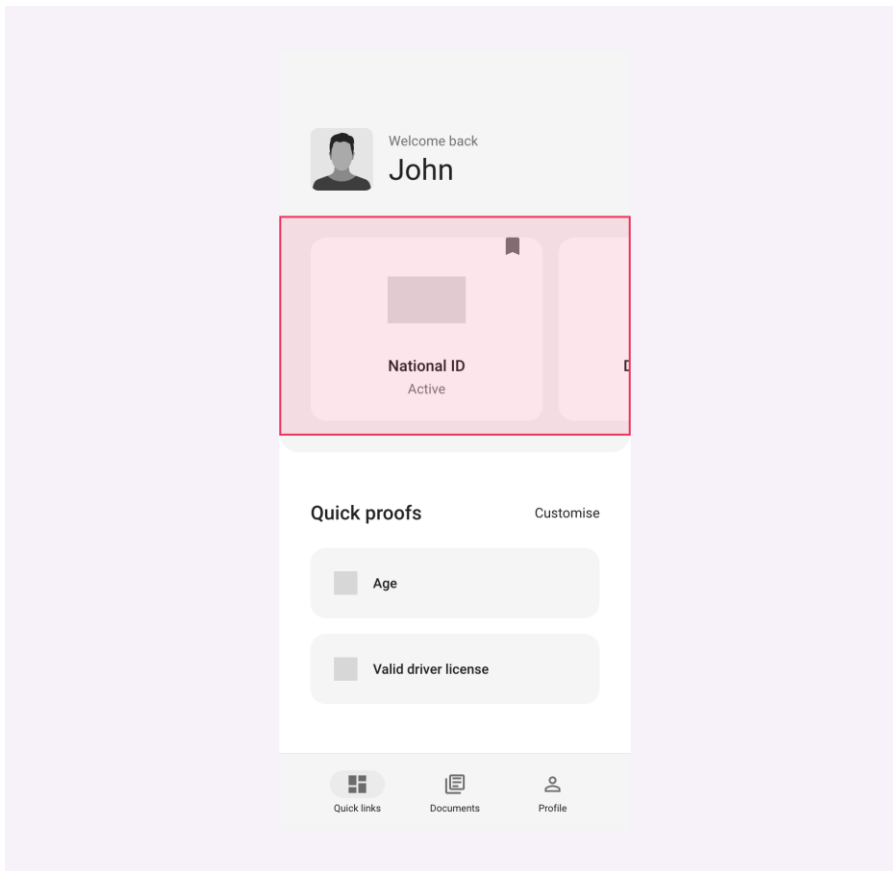
235

236 FIGURE 9: IOS 3D TOUCH EXAMPLE

237

238 **Bookmarked or Recently used documents on homepage**

239 Users can customise their home screens with the documents most relevant for them



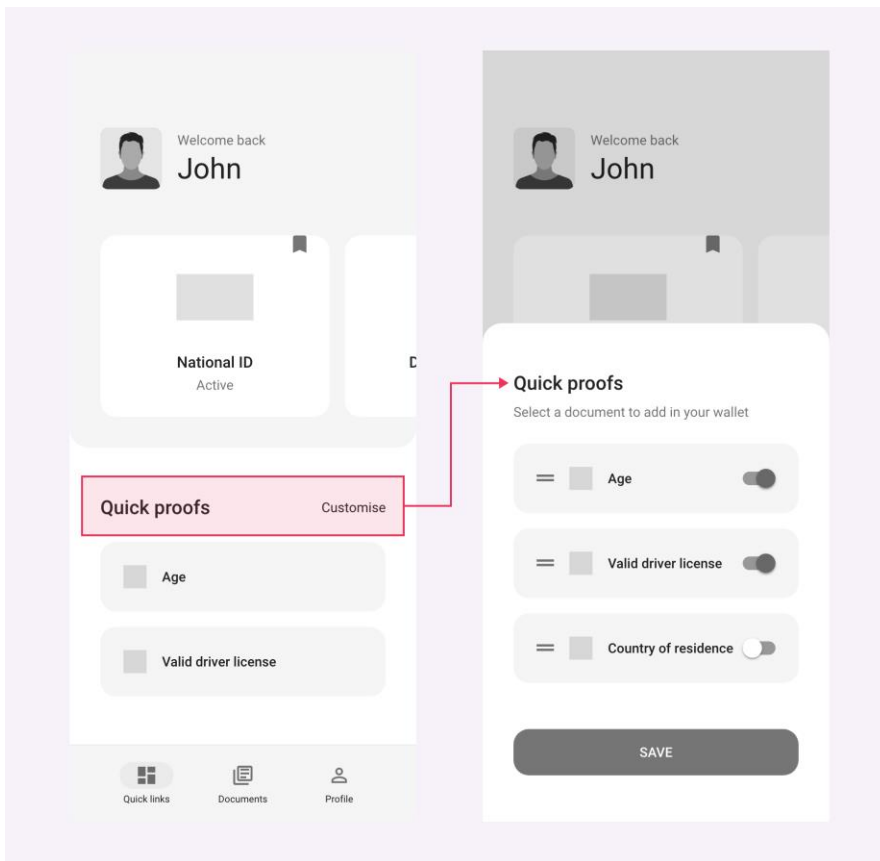
240

241 **FIGURE 10: BOOKMARKS EXAMPLE**

242

243 **Quick proofs within the app**

244 Quick proofs can give quick access to specific information serving both convenience and privacy



245

246 **FIGURE 11: QUICK PROOFS EXAMPLE**

247

248 3.8 AESTHETIC AND MINIMALIST DESIGN



Interfaces should not contain information which is irrelevant or rarely needed. Every extra unit of information in an interface competes with the relevant units of information and diminishes their relative visibility. Use whitespace in harmony with your content.

249

250 3.9 HELP USERS RECOGNIZE, DIAGNOSE, AND RECOVER FROM ERRORS



Error messages should be expressed in plain language (no error codes), precisely indicate the problem, and constructively suggest a solution.

251

252 3.9.1 INDICATIVE EXAMPLES

253

Original	<p>Failure An authentication error has occurred</p> <p>OK</p>
Clear	<p>Sign-in error You entered an incorrect password</p> <p>OK</p>
Clear, Concise	<p>Wrong password</p> <p>OK</p>
Clear, Concise, Useful	<p>Wrong password</p> <p>TRY AGAIN RECOVER PASSWORD</p>

254

255 **FIGURE 12: ERROR MESSAGES EXAMPLES**

256

257 **3.10 HELP AND DOCUMENTATION**



It's best if the system doesn't need any additional explanation. However, it may be necessary to provide documentation to help users understand how to complete their tasks.

258

259 **3.10.1 INDICATIVE EXAMPLES**

260 This can come in the form of App-onboarding, tutorials, F.A.Q.s or a Help section.

261

262 **3.11 ACCESSIBILITY**

263 An estimated 100 million people in the EU have some form of disability, and so represent an important
264 segment of its population and a large user group.

265 With Europe’s aging population this number is only going to rise. Keeping this in mind, it is important to
266 distinguish accessibility from disabilities. Accessibility in this case, refers to making a website accessible
267 to users who due to their temporary or permanent condition, their age, or their situation may face
268 issues with accessing website content. For example, individuals with reduced manual dexterity due to
269 injury or neurological conditions (permanent), or with an injured arm (temporary), or a new parent
270 holding a baby (situational) all experience difficulties that may impede movement, coordination, or

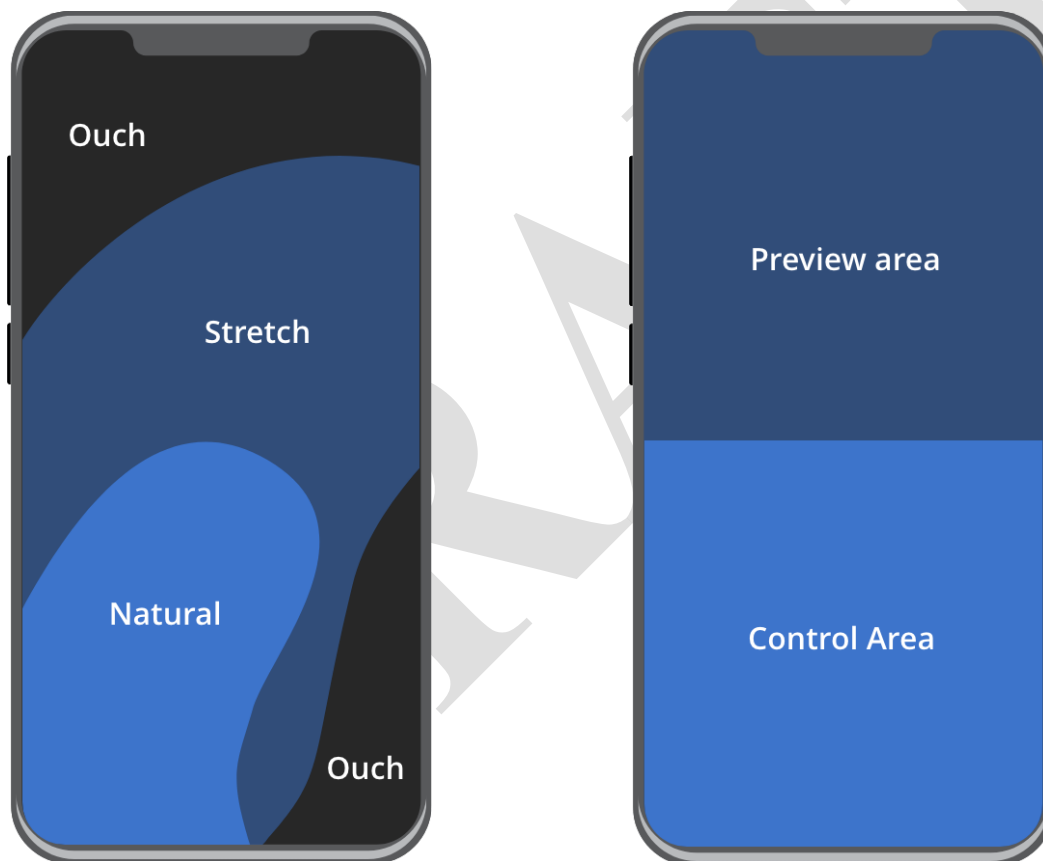
271 sensation or what is most commonly referred to as motor disability. Therefore, it concerns a much
272 wider audience that one may initially think. The definition of disability differs as the term disability
273 refers to ‘long-term physical, mental, intellectual or sensory impairments which in interaction with
274 various barriers may hinder a person’s full and effective participation in society on an equal basis with
275 others. By delivering the user experience in a way that is accessible to people with the aforementioned
276 needs, we are providing equal access to information for all citizens regardless of their situation or
277 condition.

278

279 3.11.1 LAYOUT

280 Aim to have at least the main controls for the app at the bottom half of the screen when they are easily
281 reachable with the thumb when operating the phone with one hand. The top half should be used for
282 displaying information, documents, QR codes etc.

283



284 FIGURE 13: LAYOUT

285

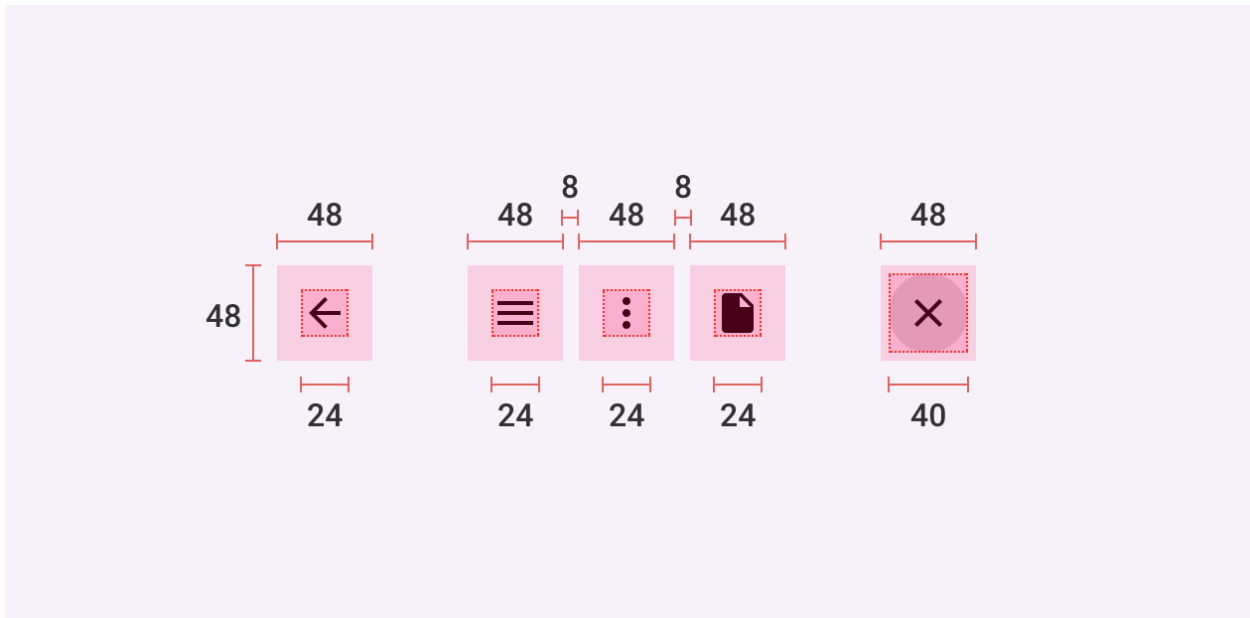
286 3.11.2 TARGET SIZES

287

288 A target size is the area that can be activated in order to interact with an element. Individuals with
289 dexterity challenges may find it more challenging to utilize a website if the target size is smaller. In this

290 section, we'll examine methods² for generating target sizes that are user-friendly, uniform, and properly
 291 spaced. A person's ability to interact with smaller controls may be impacted by a disability or a
 292 combination of disabilities that affect their motor movements and dexterity, as well as by the act of
 293 using a website while on the move, such as while walking or commuting.

294



295

296 **FIGURE 14: TARGET SIZES**

297

298 3.11.3 COLOUR CONTRAST GUIDELINES

299 Text to background colour contrast should meet a **4.5:1** ratio.

300 How to check: enter the hex codes for the foreground and background colours using

301 <https://whocanuse.com/>

302

303 3.11.4 FONT SIZE GUIDELINES

304 The UI should be designed to support up to x2 the text size without breaking.

305

306 3.11.5 ANIMATIONS

307 Avoid adding flashing, blinking, and rotating animations on the background. Excessive screen movement
 308 with no mechanism to control can make it difficult for users to gather information.

309

² Methods examined: By Apple (<https://developer.apple.com/design/human-interface-guidelines/layout>) and Google (<https://m3.material.io/foundations/layout/understanding-layout/overview> & <https://m3.material.io/foundations/accessible-design/accessibility-basics>)

310 Animations and transitions should be:

- 311 • **Informative** (Motion design informs users by highlighting relationships between elements,
312 action availability, and action outcomes.)
- 313 • **Focused** (Motion focuses attention on what's important, without creating unnecessary
314 distraction.)
- 315 • **Expressive** (Motion celebrates moments in user journeys, adds character to common
316 interactions, and can express a brand's style.)

317

318 3.11.6 SCREEN READERS

319 Make sure you provide the relative support for screen readers. Consider how the reader is going to read
320 the screen and place items accordingly for convenience. In case of having to read through a lot of
321 content to get to the main controls, consider providing a skip button.

322

323 3.12 WRITING

324 Text should be understandable by anyone, anywhere, regardless of their culture or language. UI text can
325 make interfaces more usable and build trust. Text should be clear, accurate, and concise.

326

327 3.12.1 WRITE IN THE PRESENT TENSE.

328 Use the present tense to describe product behaviour. Avoid using the future tense as this usually
329 requires later updates.

330

331 Use the present tense to describe product behaviour. Avoid using the future tense to describe the way a
332 product always acts. When you need to write in the past or future tenses, use simple verb forms. This
333 may not be applicable to all languages; the overall goal is to be as concise as possible without
334 compromising clarity.

335



Document added

336 Write in the present tense.

337



Document has been added


338 Don't write in different variations of the present tense, such as the present perfect tense.

339

340


341 **3.12.2 BEGIN WITH THE OBJECTIVE.**

342 When a phrase describes a goal and the action needed to achieve it, start the sentence with the goal.

 To add a document, click +

343 Start a statement with the objective (“to add a document”) and end it with the user action (“click +”).

344

 Click + to add a document


345 Don't state the action the user takes (“Click +”) before the objective (“to add a document”).

346

347 **3.12.3 AVOID COMBINING FIRST AND SECOND PERSON.**


348 To avoid confusing the user, avoid using "me" or "my," and "you" or "your," in the same phrase.

349

 Change **your** preferences in **My** Account

350 Don't refer to the user in both the second person and the first person within the same phrase.

351

 Change **your** preferences in Account

352

353

354 4 EUDI WALLET – DESIGN CONSIDERATIONS

355 This section lists specific areas/features on which design considerations are deemed important to
356 ensure a common user experience across the national implementations of the EUDI Wallets. It shall be
357 noted that this list highlights specific areas which are prioritised as important but does not aim to be an
358 exhaustive list.

359

360 4.1 USER AUTHENTICATION

- 361 • Covering common user authentication aspects, e.g. PIN, biometrics etc.
- 362 • Exploring the balance between the corresponding security aspects comparing to the user
363 friction points throughout the entire user flow (e.g. required only at the point of sharing data?
364 Or at login as well?)
- 365 • Guidelines around ‘user consent’ in data sharing scenarios (e.g. requesting user consent,
366 enforcing trust)
- 367

368 4.2 BROWSING CREDENTIALS/DOCUMENTS

- 369 • Guidelines in relation to displaying a list of credentials/attestations in the EUDI Wallet

370

371 4.3 QR CODE PRESENTATION

- 372 • Guidelines in relation to presenting the QR code for the corresponding proximity use cases

373

374 4.4 CONFIRMATION/SUMMARY/AUTHENTICATION RESULTS

- 375 • Guidelines in relation to the authentication results presentation, i.e. successful/unsuccessful
376 identification and authentication
- 377 • Guidelines in relation to data transfer results for proximity sharing use cases, i.e.
378 successful/unsuccessful data transfer)
- 379 • Covering guidelines related to the confirmation/summary results presented to the user

380

381 4.5 ERROR MESSAGES

- 382 • Handling/Display of error messages in different scenarios
 - 383 ○ Erroneous user credentials
 - 384 ○ User is not authenticated.
 - 385 ○ Document is considered invalid.
 - 386 ○ Relying party is not considered trusted.
- 387 • Principles/guidelines on how these shall be presented/structured etc.

388

389 4.6 PRIVACY/SECURITY BY DESIGN

- 390 • Covering applicability of privacy/security aspects in the data sharing process (e.g. visual
391 representation of ‘password’ field)

392

393 4.7 TRUST MARK

- 394 • Establish trust through the use of the EUDI Wallet Trust Mark
395 • Applicability and placement in the corresponding sharing processes
396

397 4.8 NOTIFICATION GUIDELINES

- 398 • Guidelines in relation to displaying user notifications (where applicable) in the EUDI Wallet
399
400

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401 5 CONCLUSION

402 In conclusion, this EUDI Wallet Design Guide document represents the first iteration of what intends to
403 be a 'living' document, which will be further elaborated for the specificities of the EUDI Wallet
404 functionalities, as listed in section 3 of the document. As such, it is recognized that there may be areas
405 for further elaboration and analysis on which feedback and improvement suggestions from stakeholders
406 is anticipated.

407 Taking into consideration that the EUDI Wallet Design Guide shall be applicable for the national
408 implementations of the EUDI Wallet, the boundaries of this document are set to common principles
409 that shall be applicable to all national implementations. These shall be considered as recommendations
410 to ensure a similar user experience across the different national implementations. By taking a
411 collaborative approach and continuously improving upon this document, the aim is to create a EUDI
412 Wallet Design Guide that assists in the national implementations, while at the same time meets the user
413 expectations. We encourage stakeholders to review this EUDI Wallet Design Guide document
414 thoroughly and kindly provide feedback that will assist if further shaping this design guide.

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