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2.0

KS X 3253:2016

: (X)

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: (<http://www.rra.go.kr>)

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: 2016 10 20
: (X)
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18 5

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3	1
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	50
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2.0

Mobile Application Content Accessibility Guidelines 2.0

1

3 가

가

2

가

(가)

Mobile Accessibility: How WCAG 2.0 and Other W3C/WAI Guidelines Apply to Mobile, W3C First Public Working Draft 2015. 2.

3

3.1

3.1.1

가

[: ISO 9241 - 20:2008, 3.1]

3.1.2

a)

b)

3.1.3

3.1.4

3.1.5

(undue burden)

가

[: ADA Title III Regulation 28 CFR Part 36, section 36.104]

3.1.6

[: ISO 9241 - 171:2008, **3.4**]

3.1.7

[: KS X ISO/IEC TS 20071 - 11:2012, **2.1.1**]

3.1.8

(contrast)

3.1.9

1

[: ISO 9241 - 171:2008, **3.21**]

2

가 가 가 가 가

가 (), 가

5

가

5.1 () 가

(TTAK.KO-10.0772,).

5.2 (,) 가

a)

b) 가 가

c)

d)

5.3 ()

가

5.4 ()

3 : 1

5.5 (, , , ,)

a) 가

가

가

b)

가

5.6 ()

a)

b)

가

6

가

6.1 ()

(focus)

a)

가

b)

c)

가

6.2 () (touch)

가

(multi-touch)

(pan),

(drag and drop)

6.3 ()

a)

b) 가

a)

가 :

6.4 ()

6.5 ()

a)

b)

가

9 mm

7

가

7.1 () ,

- a)
- b)

c) 가

d) 가

7.2 ()

- a)
- b) 가

7.3 ()

a) 3 ~ 50

b) 가 ,

7.4 ()

- a) , 3
- b) , 가 ,

7.5 (가) 가 가

a) 가

b)

8

가

8.1 ()

a) 가

b)

8.2 ()

a)

b)

c) 가

9 가

가 가 가

, , , , ,

A
()

(6), (5), (5), (3)

A.1

가

A.1.1

가

A.1.1.1

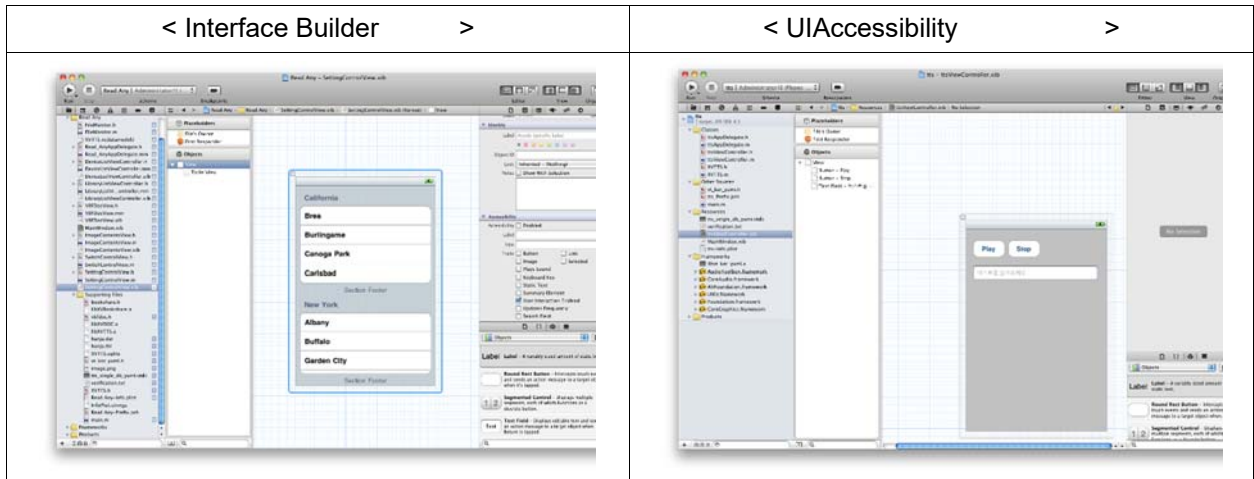
(VoiceOver), (Talkback), (Narrator) (iOS)
가

A.1.1.2

가 (short & clear)
“ ”, “ ”, “ ”
(x) [(x), (x), ()].

A.1.1.2.1 iOS

2 가 , Interface Builder
UIAccessibility API
Label Hint 가
Label Hint 가 iOS 가
Hint (off) Label
“ ” Label “ ” Hint



a) Interface Builder :
 Interface Builder UI
 Interface Builder Attribute inspector
 Label 가
 Xcode iOS Simulator Accessibility
 inspector

< Interface Builder >	
<p>1) Accessibility (Enabled)</p> <p>2) Label</p> <p>3) 가</p>	<p>Hint</p>
<p>< > Interface Builder Xcode 15 7 Xcode 6</p>	

b) UIAccessibility API
 UI Interface Builder
 , UIAccessibility API Label

```
[houseButton setIsAccessibilityElement:YES];
[houseButton setAccessibilityLabel:@""];
[houseButton setAccessibilityHint:@""];
```

A.1.1.2.2

GUI

2가

Java

GUI

XML

Interface Builder

Id		...
Layout Parameters	⌈	
Text	HTML Preview	...
Hint		...
Text Color		...
Text Appearance	?android:attr/textA...	...
Text Size	12sp	...
Content Description		...
TextView	⌈	
Text	HTML Preview	...
Hint		...
Text Color		...
Text Color Hint	■ @android:color/...	...
Text Appearance	?android:attr/textA...	...
Text Size	12sp	...
Typeface		...
Text Style		...
Font Family		...
Text Color Link	■ @android:color/...	...
Max Lines		...
Max Height		...
Lines		...

a) XML

```
<ImageButton
    android:id="@+id/add_entry_button"
    android:src="@drawable/plus"
    android:contentDescription=" "
    />
```

b) Java code

```
Button add_entry_button = new Button(this);
add_entry_button.setContentDescription(" ");
```

A.1.1.3

```
*** ( , )
```

가

가

< — *** >	< iOS >
	<ol style="list-style-type: none"> 1. menu icon default 2. right icon default 3. 4. 5.

PHO***

가

가

< — PH**** >	< iOS >
	<ol style="list-style-type: none"> 1 terms off 2 terms off 3 terms off 4 terms off

**** ”

가

2015

< >	< iOS >
	<p>1 2 3 / 4 5 6 7 / 8 9 10 11 12 13 MyKB 14</p>

)가 가 가 가	(, , 가 가
< >	< iOS >
	1 2 KBStar*t 3 4 343 24 **** 354 5 KB Star*t 343 24 **** 354 6 7 KB 8 9 778801 04 ****91 10 11

A.1.2 ,

가

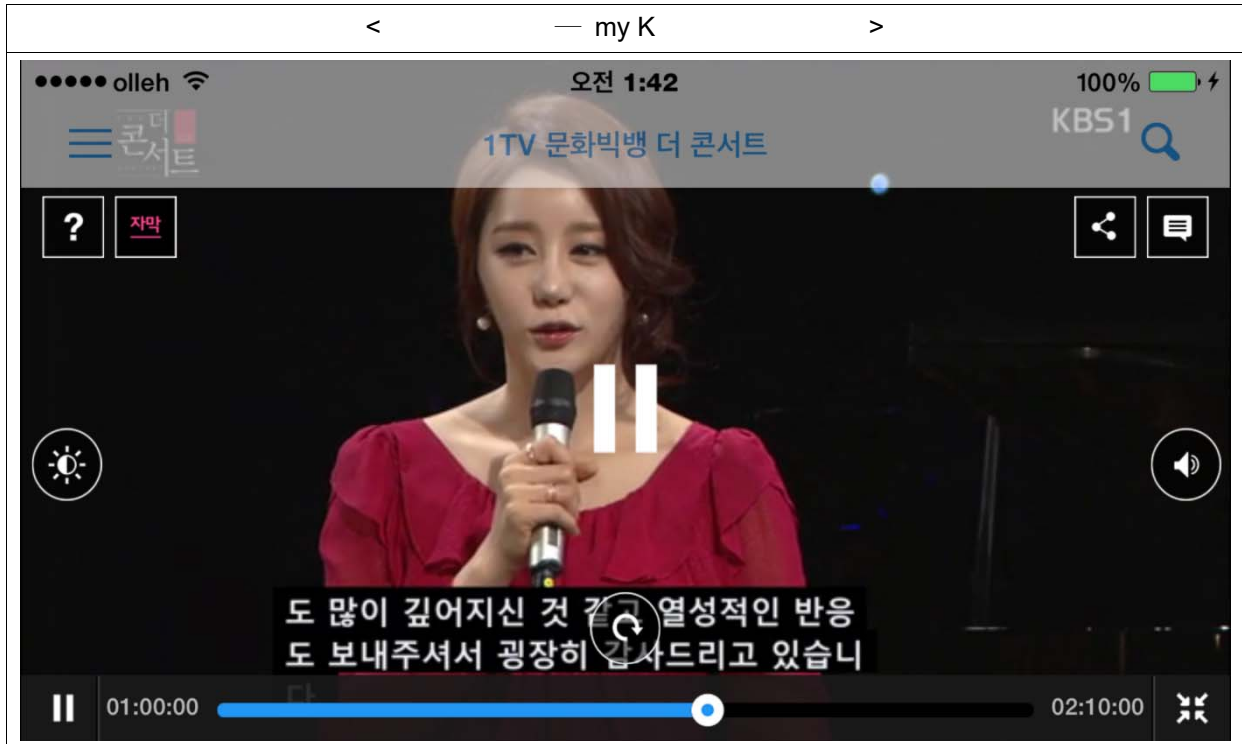
A.1.2.1

A.1.2.2

KS X 3253:2016

A.1.2.3

“my K”



A.1.3

A.1.3.1

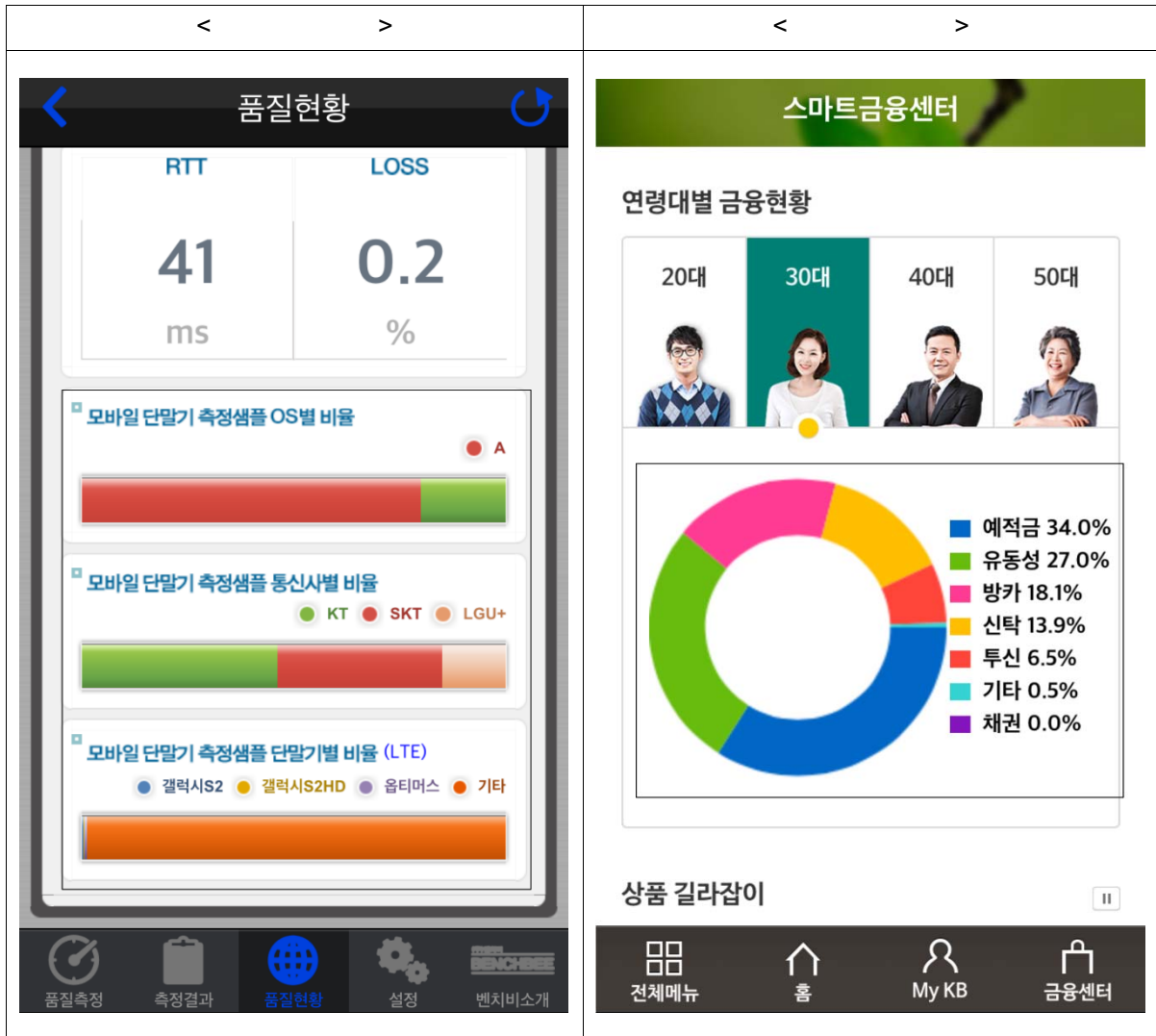
가

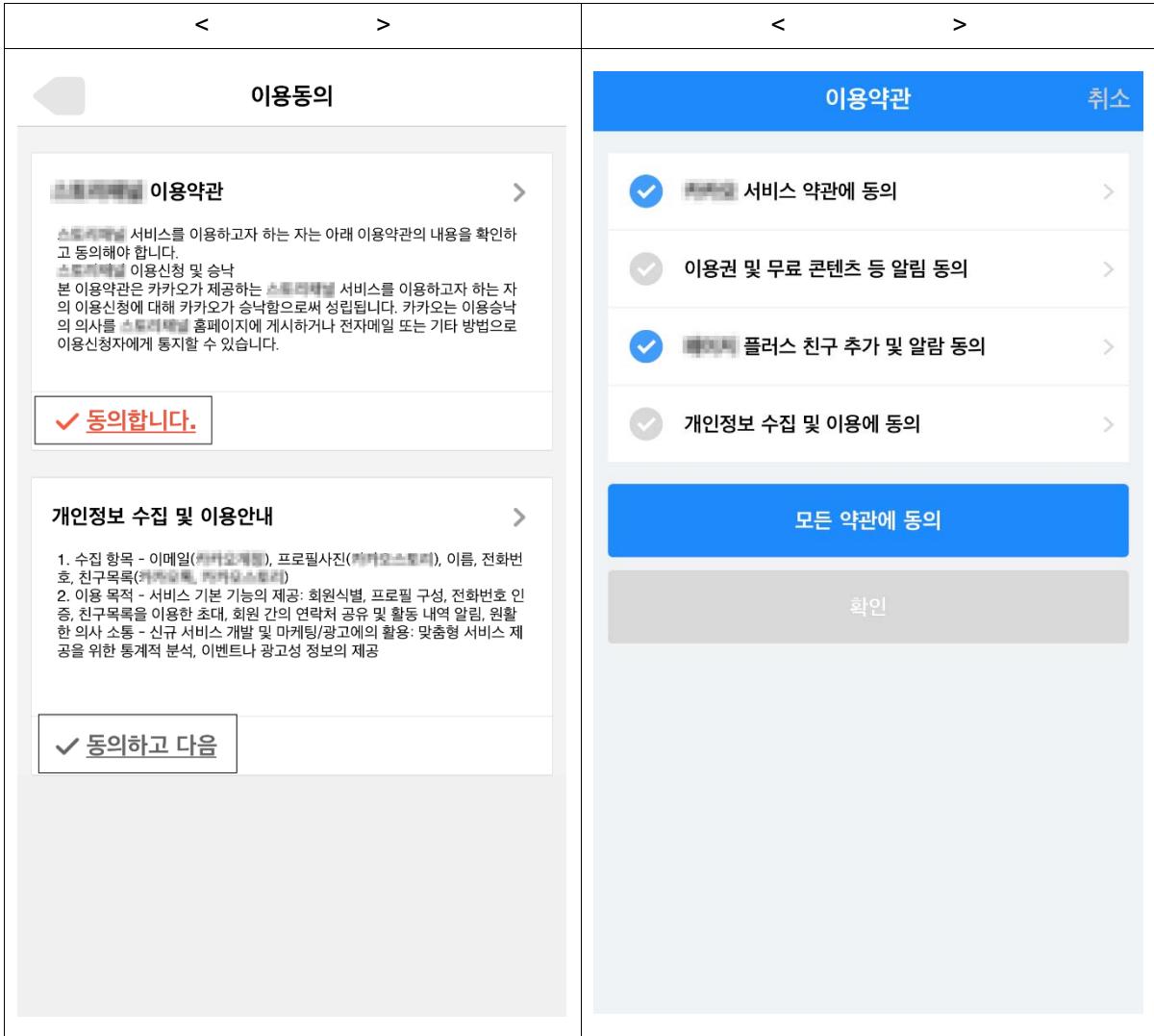
가

A.1.3.2

A.1.3.3

OS,







A.1.4

A.1.4.1

가

A.1.4.2

(contrast)

4.5 : 1

3 : 1

iOS 8

“

”

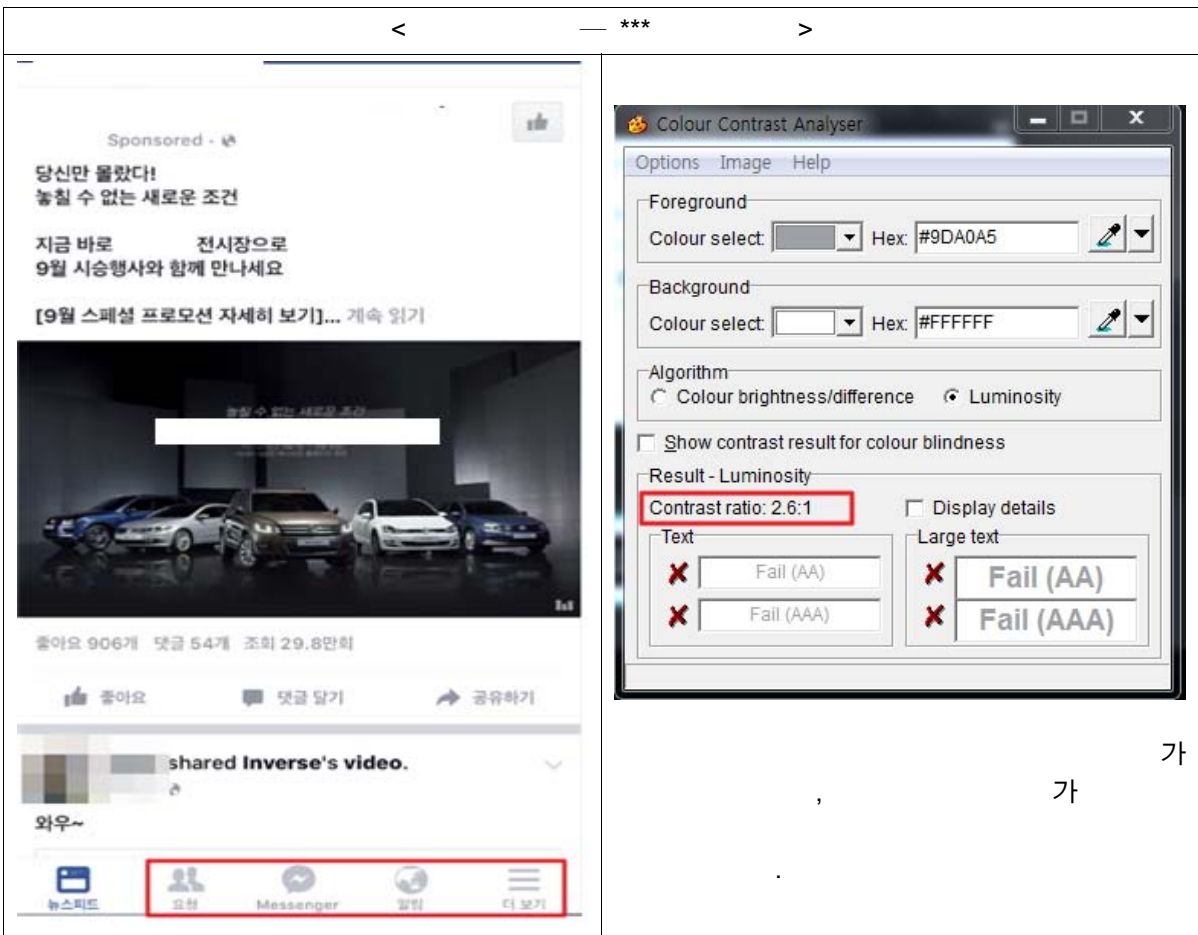
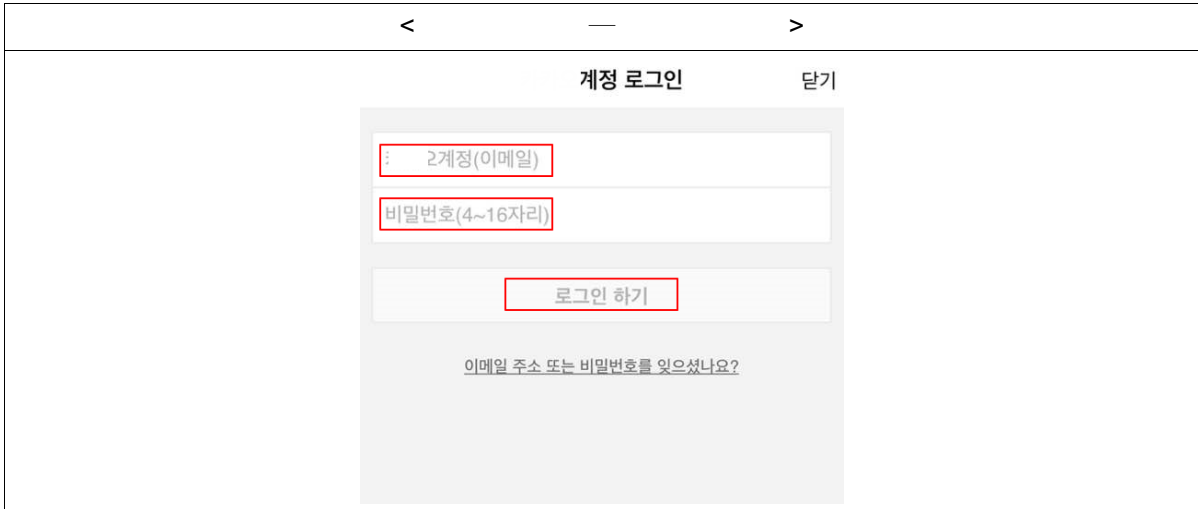
< : 가 >
Color Doctor http://www.fujitsu.com/global/accessibility/assistance/cd/download.html Visual Impairment Simulator for Microsoft Windows http://vis.cita.uiuc.edu/index.php Colour Contrast Analyser http://juicystudio.com/article/colour-contrast-analyser-firefox-extension.php Colour Checker http://www.etre.com/tools/colourcheck/ Color Selector http://www.fujitsu.com/global/accessibility/assistance/cs/download.html aDesigner http://www.alphaworks.ibm.com/tech/adesigner Accessibility Color Wheel http://gmazzocato.altervista.org/colorwheel/wheel.php

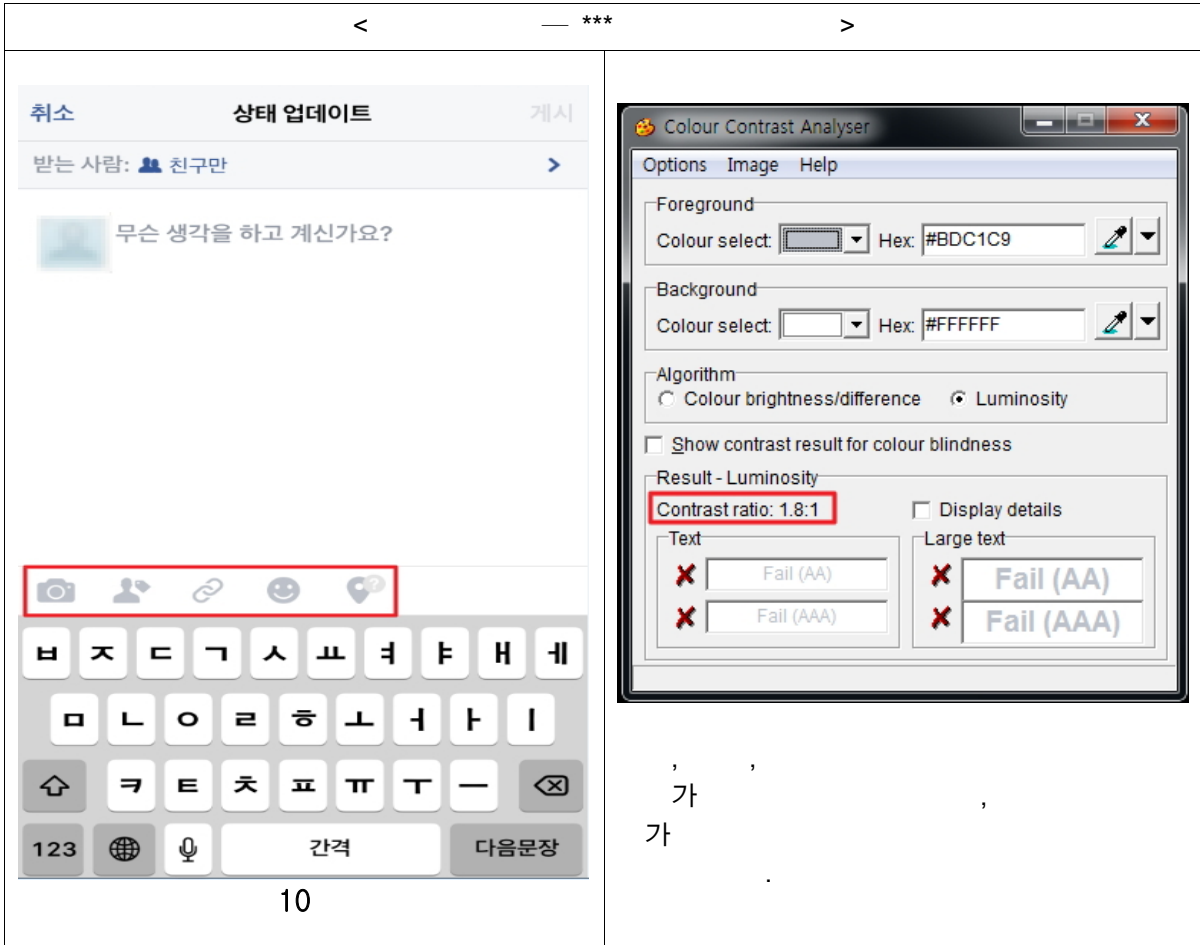
A.1.4.3

** 가
가 가

< — >
이메일 등록 ×
<input type="text" value=" @naver.com"/>
6~20자리의 영문, 숫자
다시 한번 입력해주세요.
<small>기거나 번호를 변경해도 안구, 프로필 등 기존의 정보를 불러올 수 있습니다. 네이버 메일 주소(@naver.com)를 등록해도 비밀번호는 네이버 비밀번호와 연동되지 않습니다.</small>
<input type="button" value="등록하기"/>
<input type="button" value="나중에"/>

*** 가 가





A.1.5

, , , , ,

A.1.5.1

가

가

가

가

(가)

가

A.1.5.2

, ,

, ,

가

, 가
가

, 가 , , ,
가 .

가 . ;

가

가 .

A.1.5.3

*** () 가

가

..”

가

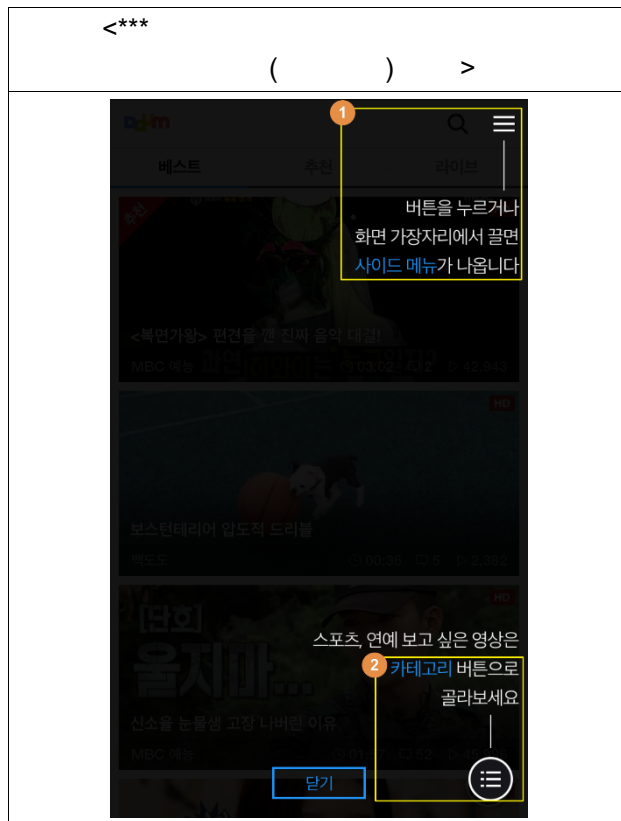
“OOO

...”

가

가

“ 가 ”



*** 가 (captcha)
가
).



A.1.6

가

A.1.6.1

가

가

A.1.6.2

가

가

A.1.6.3

Native UI



A.2

가

A.2.1

(focus)

A.2.1.1

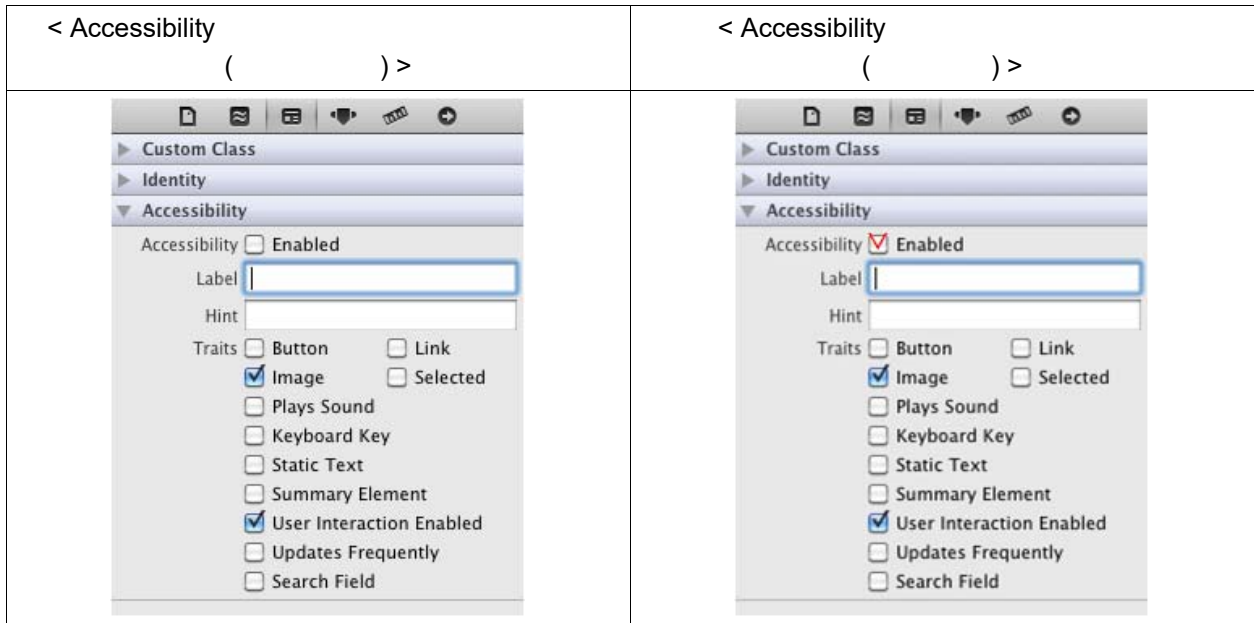
(iOS

가

A.2.1.2

A.2.1.2.1 iOS

accessibility (isAccessibilityElement (enabled) (Native UI Component) . iOS (yes) . (yes) .
 UIImageView UI accessibility (disabled) .
 label accessibility (yes)
 UIAccessibilityContainer .



A.2.1.2.2

a) : (Native UI Component) iOS UI
 (false)
 focusable (true)

```
<TextView android:id="@+id/text"
    android:focusable="true"
    android:text="Hello, I am a focusable TextView"
    android:nextFocusUp="@id/edit"
    ... />
```

nextFocusDown, nextFocusUp, nextFocus

Right, nextFocusLeft

b)


```
<EditText
    android:id="@+id/editText1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">
```

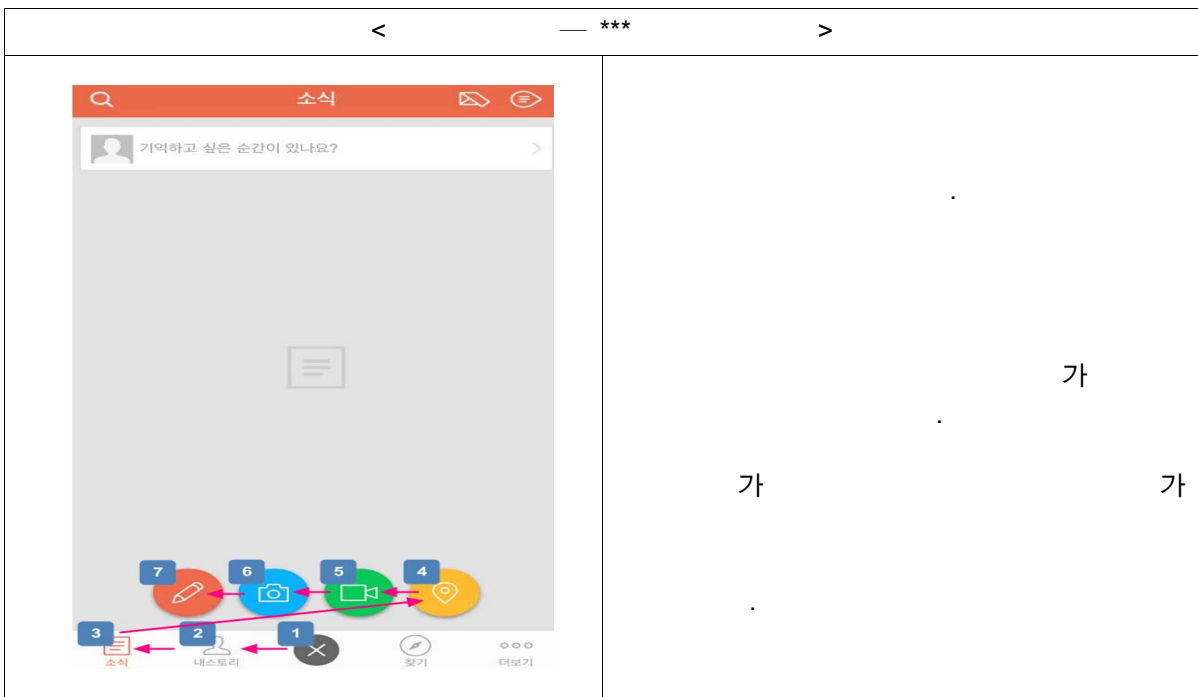
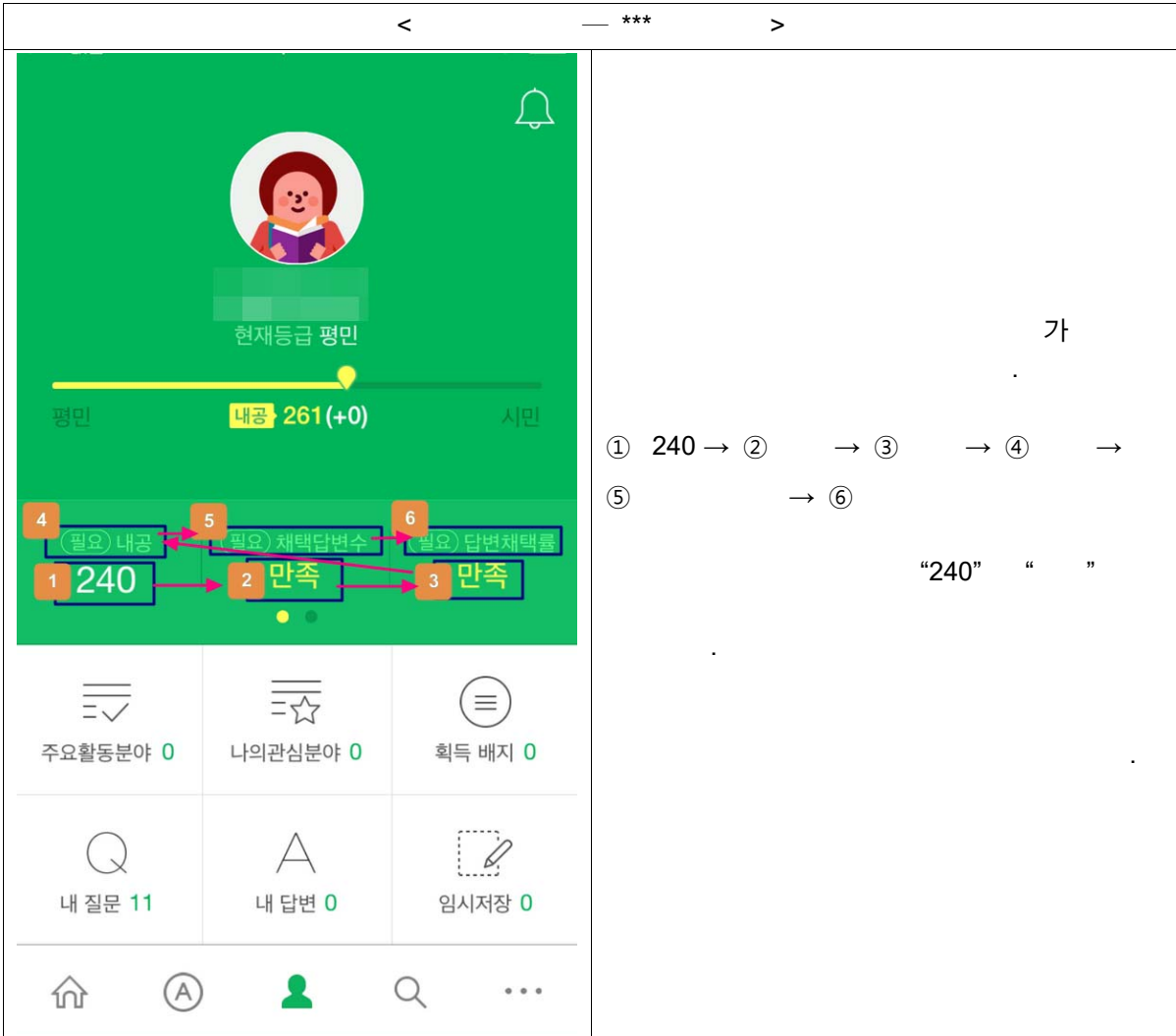
```
<requestFocus />
</EditText>
```

c)

```
sendAccessibilityEvent(AccessibilityEvent.TYPE_VIEW_FOCUSED);
```

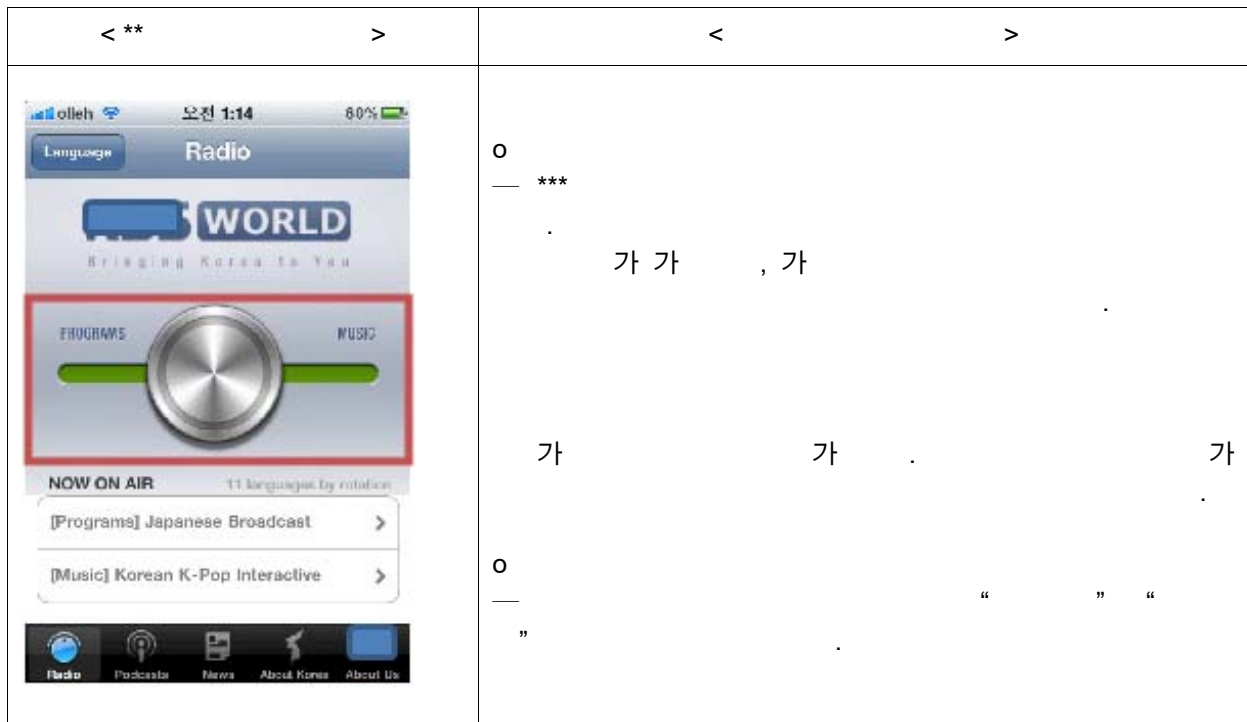
A.2.1.3

< ** 가 >	< >
	<p>o</p> <p>— , “a”, “a”, “s”, “s”, “d”, “d”...</p> <p>— “o”... “o”, “L”,</p> <p>* , ‘ ’ 가</p> <p>“dtm into 1 gif”</p> <p>o</p> <p>—</p>





가 가
가



가 가 , 가
가 가 가
가
“ ” “

A.2.2

(touch)

A.2.2.1

가 가 , 2 가 가 ,
가

가

)

A.2.2.2

가 (touch) 가 (tap) 가 (multi-touch) slide, drag and drop

iOS

UIButton

https://developer.apple.com/library/ios/documentation/UIKit/Reference/UIButton_Class/index.html#//apple_ref/occ/cl/UIButton

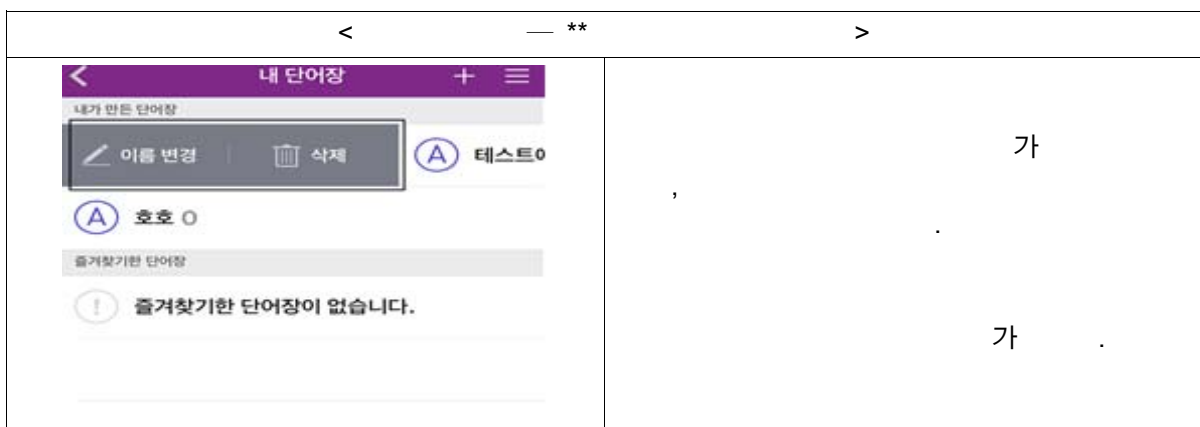
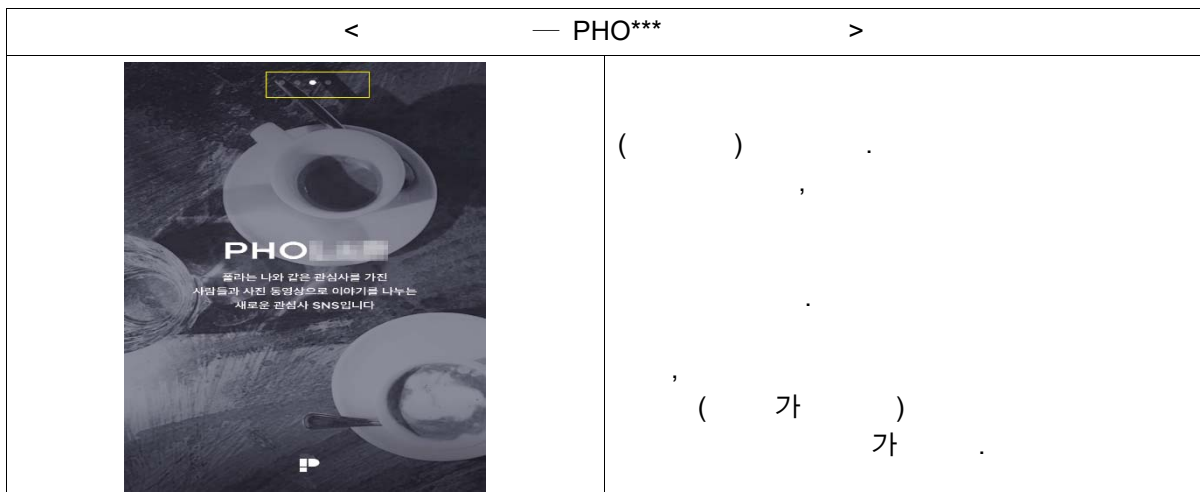
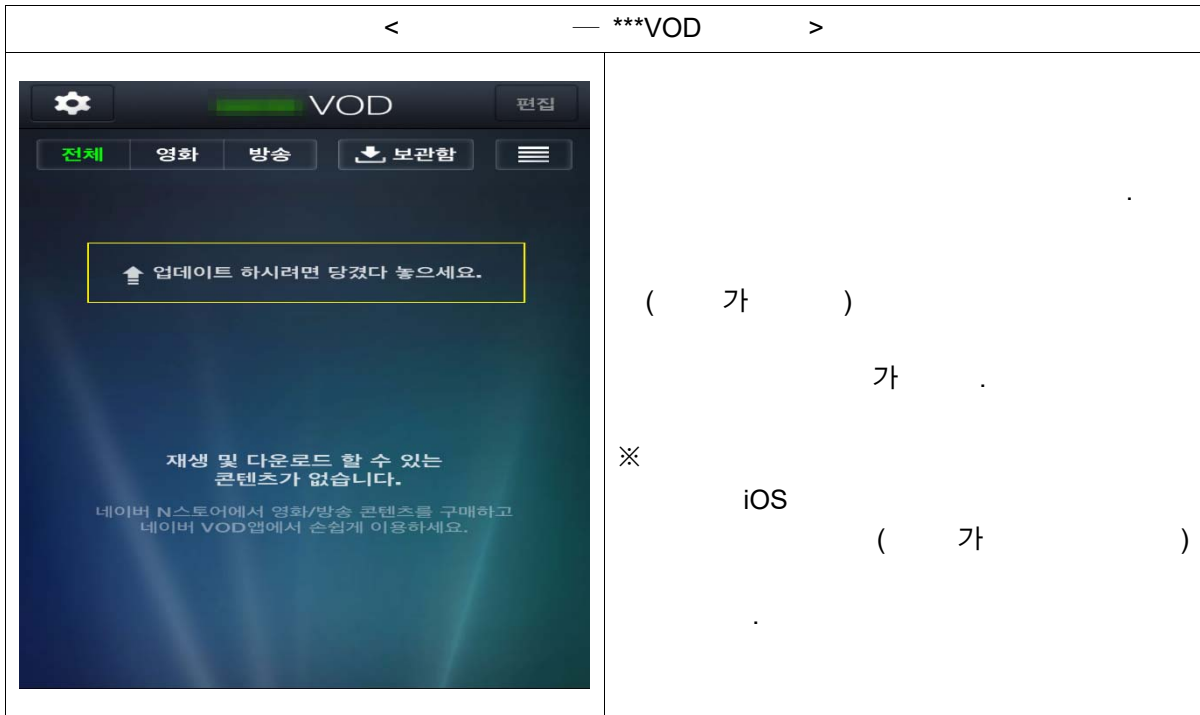
A.2.2.3

UI

가

(universal design)







A.2.3

A.2.3.1

가

A.2.3.2

20

가

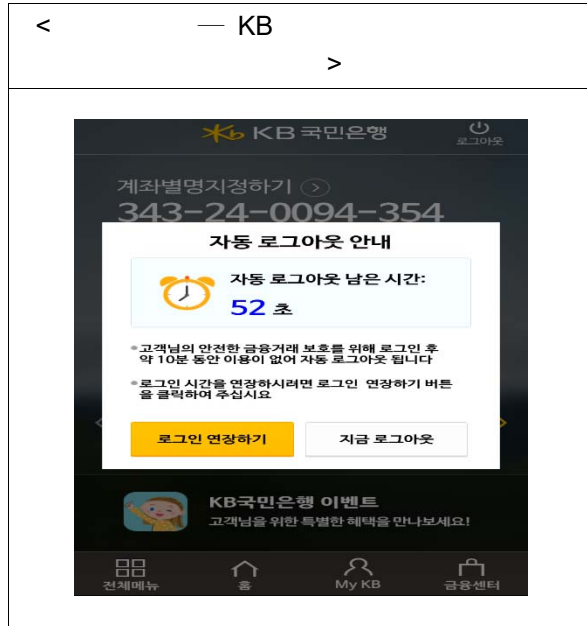
가

가

(20)

A.2.3.3

가



< >		< >	
			가

A.2.4

A.2.4.1

가

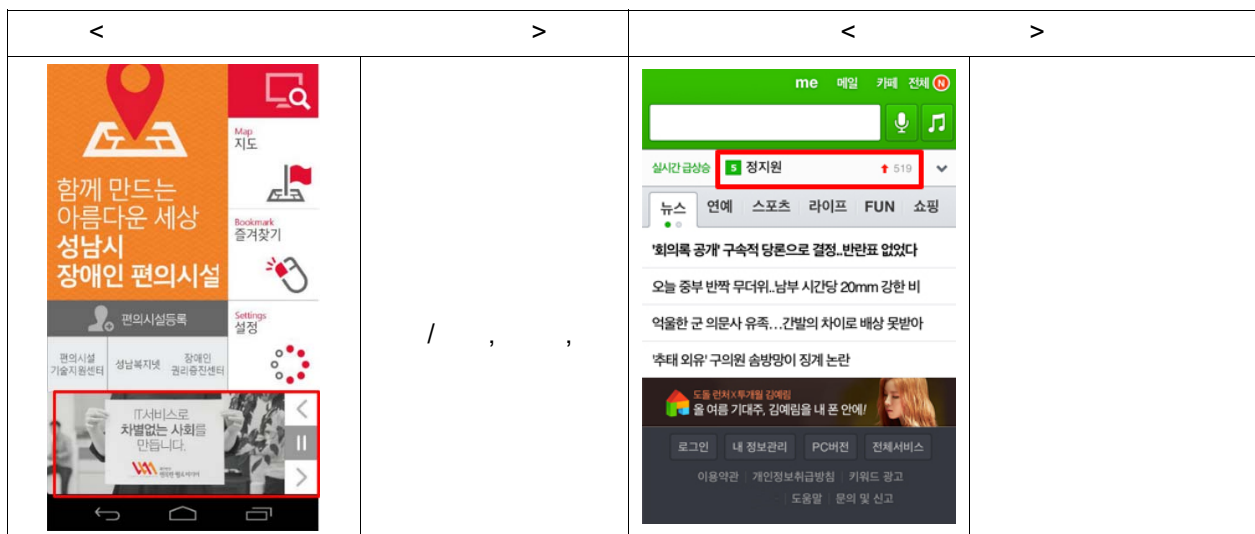
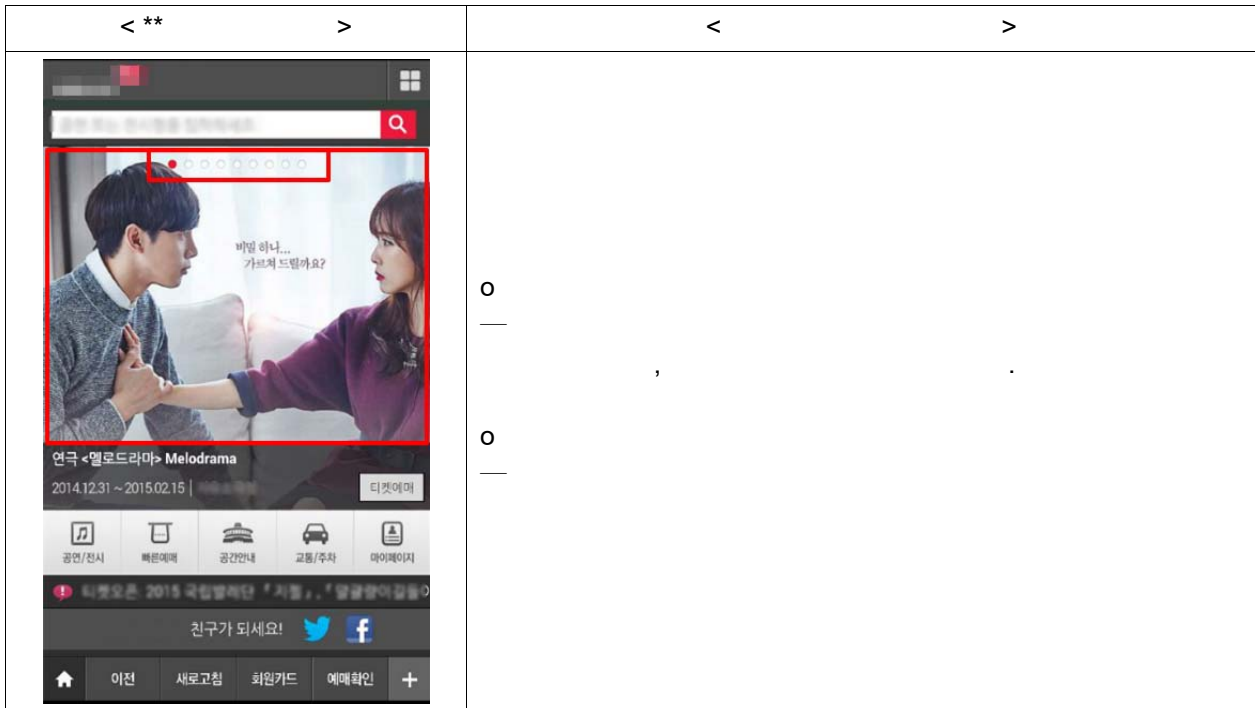
A.2.4.2

가

“ ”)

(: “ ” , “

A.2.4.3



A.2.5

A.2.5.1

가

가

A.3.1.2

가

가

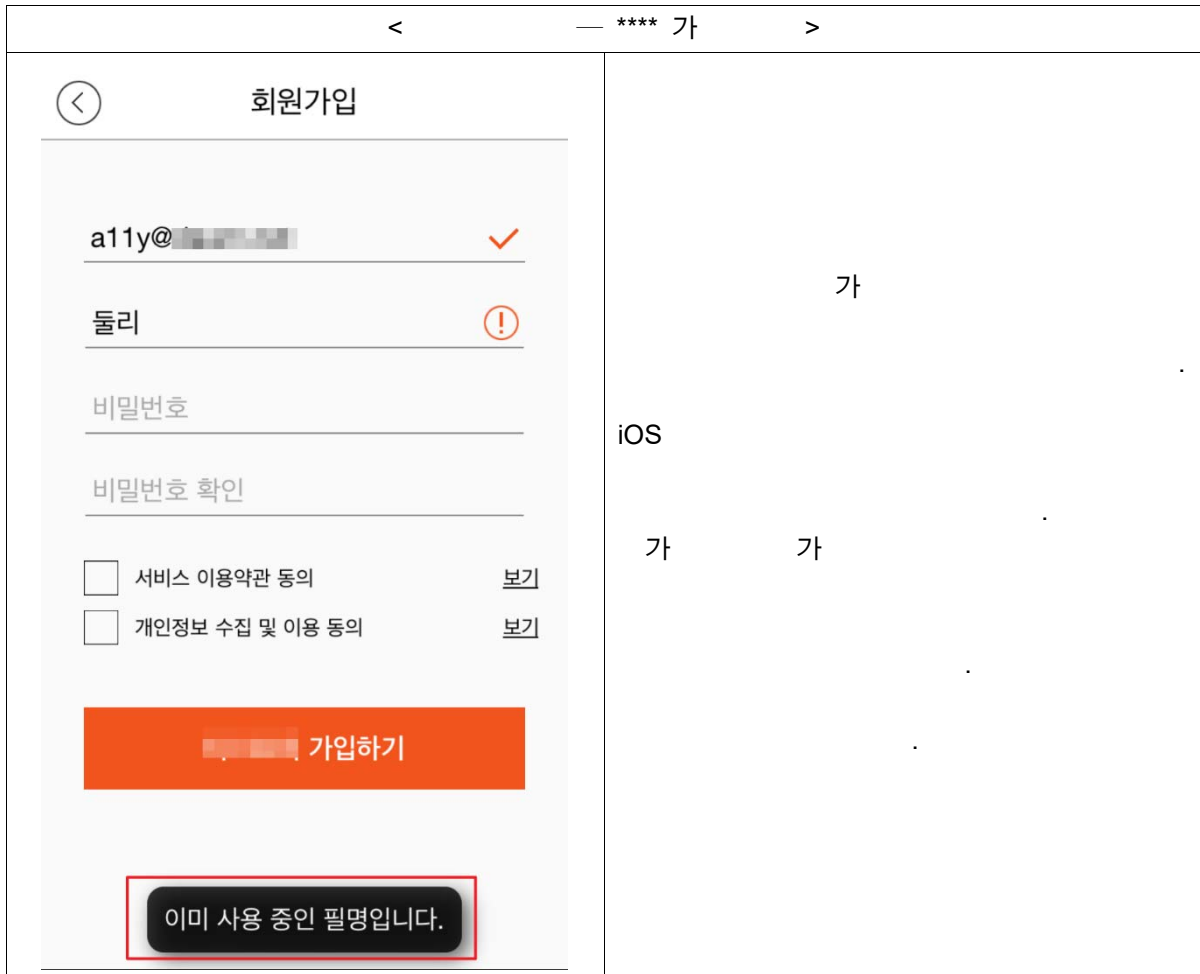
A.3.1.2.1

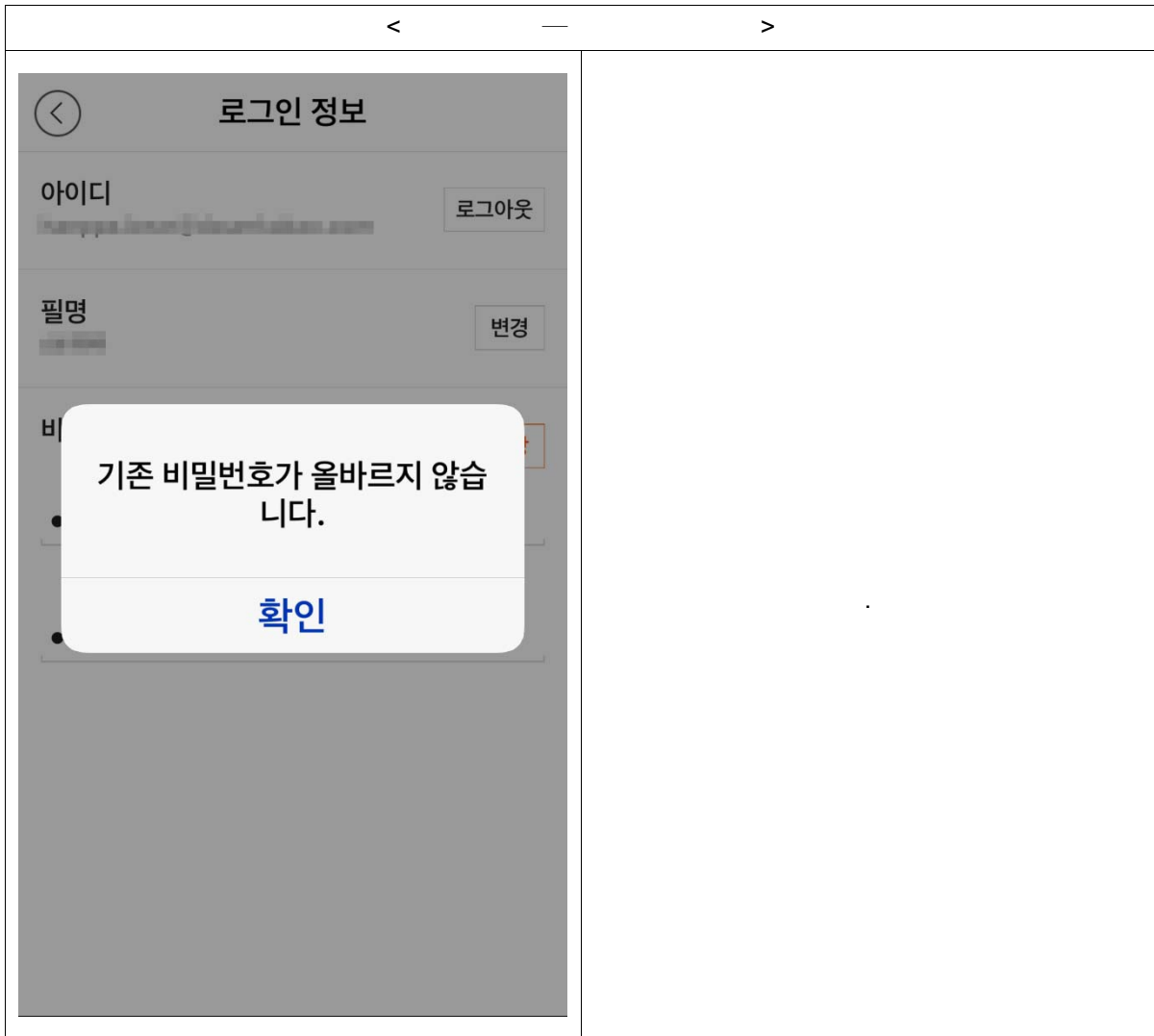
<	>
<p>메일</p> <p>abcde@google.co.kr</p> <p>기타 옵션</p> <p>암호</p> <p>암호</p>	
<	>
<pre> <TextView android:layout_width="wrap_content" android:layout_height="wrap_content" android:text="@string/id" android:labelFor="@+id/edit_id" /> <EditText android:id="@+id/edit_id" android:layout_width="wrap_content" android:layout_height="wrap_content" /> </pre>	
<	>
<pre> <EditText android:id="@+id/edit_id" android:layout_width="wrap_content" android:layout_height="wrap_content" android:contentDescription="@string/input_id" /> <EditText android:id="@+id/edit_id" android:layout_width="wrap_content" android:layout_height="wrap_content" android:hint="@string/input_guide" /> </pre>	

A.3.1.3

	<p style="text-align: center;">< ></p> <hr/> <p style="text-align: center;">< ></p>
--	---

	<p style="text-align: center;">< ></p> <p style="text-align: center;">O — “ ’ ” O — “ ” “ ”</p> <p style="text-align: right;">가</p>
--	---





A.3.2

A.3.2.1

가

A.3.2.2

(user experience)

(UI)

(, , , ,) 가

iOS

“ ”

custom menu

<https://developer.apple.com/library/mac/documentation/Cocoa/Conceptual/Button/Concepts/RadioButtonButtons.html>

Custom Menu

<https://developer.apple.com/library/prerelease/mac/samplecode/CustomMenus/Introduction/Intro.html>

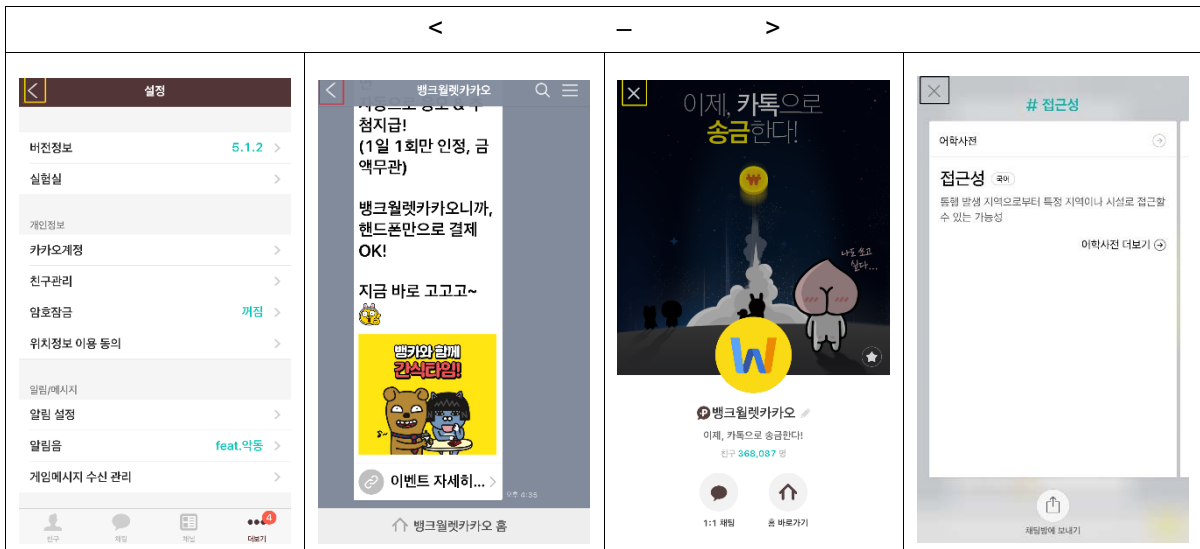
A.3.2.3



가



/ 가



A.3.3

A.3.3.1

가

가

가

A.3.3.2

3 50

A.3.3.3



A.3.4

A.3.4.1

Speak) , , 6.5 Code Factory (iOS Mobile

A.3.4.2

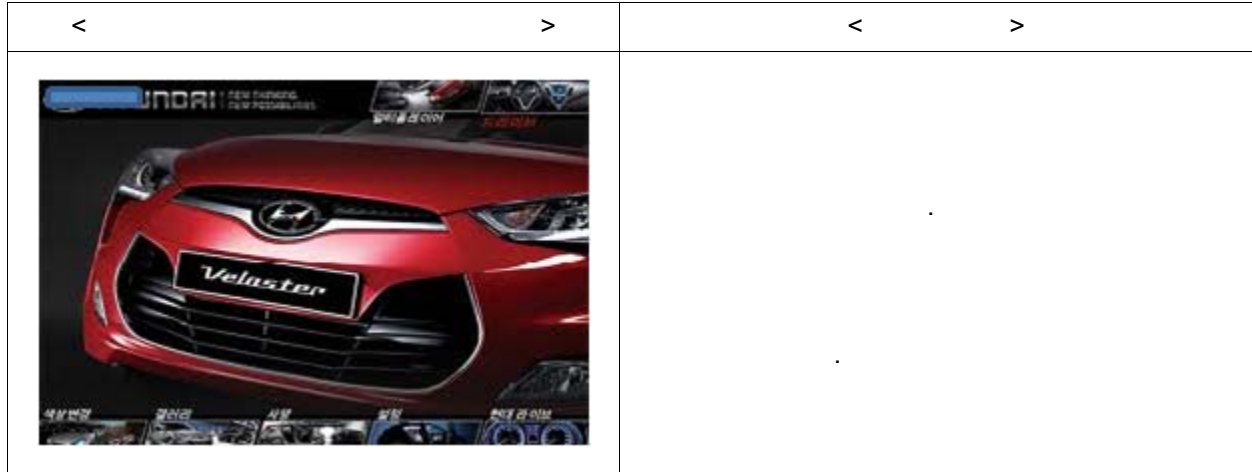
(, ,) , 3 (, ,)

A.3.4.3

**

가

가



A.3.5 가

가

A.3.5.1

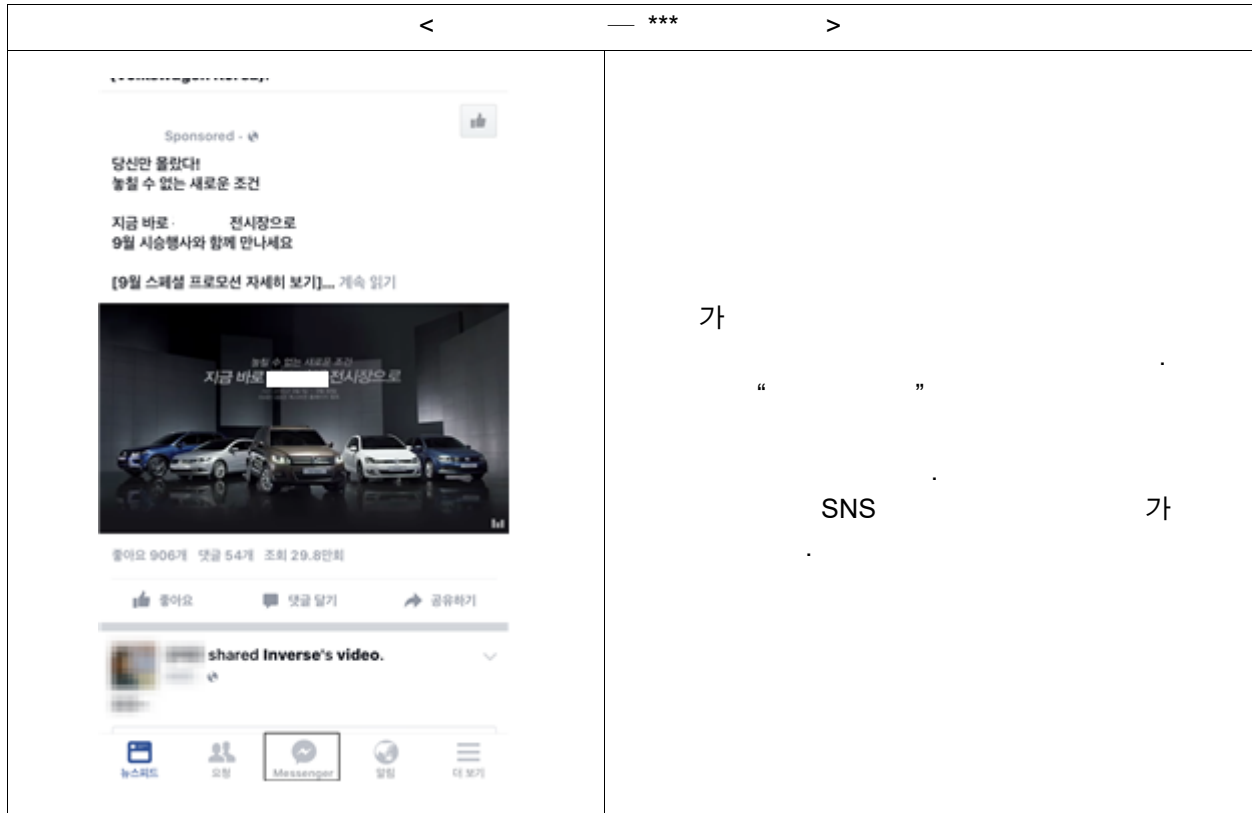
가

가

가 가
가

A.3.5.2

A.3.5.3



A.4

가

A.4.1

A.4.1.1

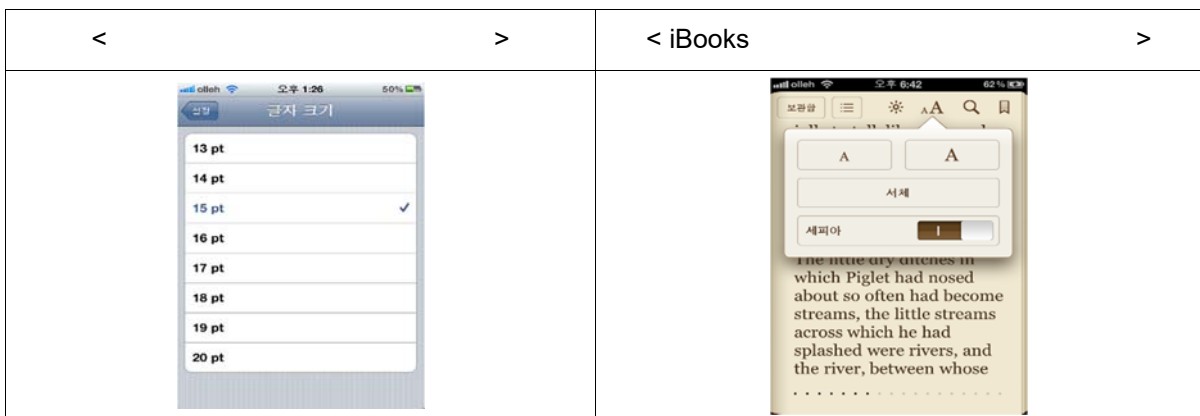
PC

A.4.1.2

(global font) 가 (setting) (inherit) 가 , 가
200 % 가 가 ,

A.4.1.3

, iBooks



A.4.2

A.4.2.1

가

가

가 (,)

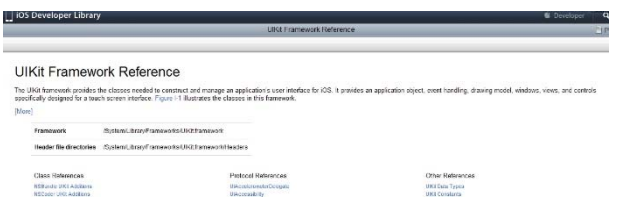

A.4.2.2

A.4.2.2.1 iOS : Native UI component UIWindow, UILabel, UIPickerView
UIWebView
UIAccessibilityContainer protocol

A.4.2.2.2 : Native UI component UIImageView
button accessibility enable

A.4.2.3

Native UI

< iOS native UI >	< native UI >
 <p>http://developer.apple.com/library/ios/#documentation/UIKit/Reference/UIKit_Framework/_index.html#apple_ref/doc/uid/TP40006955</p>	 <p>http://developer.android.com/reference/android/widget/package-summary.html</p>

< >	< >
<p>← 자주 묻는 질문</p> <p>▶ 자주 묻는 질문 TOP 5</p> <div style="border: 1px solid red; padding: 5px;"> <p>Q. [문자화된 질문 텍스트] ▾</p> <p>Q. [문자화된 질문 텍스트] ▾</p> <p>Q. [문자화된 질문 텍스트] ▾</p> <p>Q. [문자화된 질문 텍스트] ▾</p> <p>Q. [문자화된 질문 텍스트] ▾</p> </div> <p style="text-align: center;">▲ TOP</p>	<p>o</p> <p>-</p> <p>o</p> <p>-</p> <p>,)</p> <p>(</p>

< - *** >	
<p>< 설정</p> <p>버전정보 5.1.3 ></p> <p>실험실 R ></p> <hr/> <p>1 개인정보 ></p> <p>2 카카오톡 계정 ></p> <p>3 친구 관리 ></p> <p>암호잠금 OFF ></p> <p>위치정보 이용 동의 ></p> <hr/> <p>4 알림/메시지</p> <p>5 알림 설정 ON ></p> <div style="border: 1px solid yellow; padding: 2px;"> <p>알림음 설정 카톡 ></p> </div> <p>방해금지 시간대 설정 OFF ></p>	<p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p> <p>5. ON</p>

- [1] . , 2013-106
, 2013.08.
- [2] — 11 : ,
KS X ISO/IEC TS 20071-11, 2016
- [3] Apple, Accessibility programming guide for iOS
- [4] Google, Android Accessibility - Designing for Accessibility
- [5] RIM, Best practice: Designing accessible applications
- [6] ISO, Ergonomics of human-system interaction -- Part 20: Accessibility guidelines for information/communication technology (ICT) equipment and services, ISO 9241-20, 2008
- [7] ISO, Ergonomics of human-system interaction -- Part 171: Guidance on software accessibility, ISO 9241-171, 2008
- [8] ISO, Tractors and machinery for agriculture and forestry — Serial control and communications data network — Part 1: General standard for mobile data communication, ISO 11783-1, 2007
- [9] ISO/IEC, Information technology -- Framework for describing user interface objects, actions and attributes, ISO/IEC TR 11580:2007
- [10] ISO/IEC Information technology -- Interoperability with assistive technology (AT) -- Part 4: Linux/UNIX graphical environments accessibility API. ISO/IEC TR 13066-4, 2015
- [11] ISO/IEC, Systems and software engineering - Requirements for testers and reviewers of user documentation, ISO/IEC 26513, 2009
- [12] ITU-T, Making Mobile Phones and services accessible for Persons with disabilities, 2012.8
- [13] W3C, Mobile Accessibility: How WCAG 2.0 and Other W3C/WAI Guidelines Apply to Mobile, 2015. 2.
- [14] BBC, Mobile Accessibility Standards and Guide lines v1.0
- [15] W3C, Mobile Web Application Best Practices (MWABP), 2010. 12

KS X 3253 : 2016

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KS X 3253:2016

**KSKSKS
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**Mobile Application Content
Accessibility Guidelines 2.0**

ICS 35.080