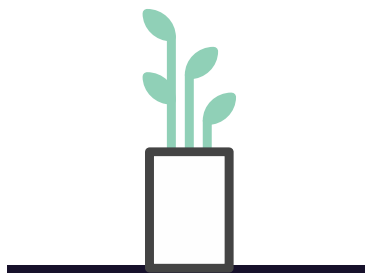


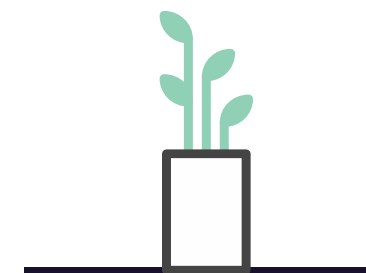


「예제로 살펴보는 WAI-ARIA」 사례집 제작 발표




WCAG

Web Content Accessibility Guidelines





W3C Recommendation



Web Content Accessibility Guidelines 1.0

W3C Recommendation 5-May-1999

This version:
<http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990505>
(plain text, PostScript, PDF, gzip tar file of HTML, zip archive of HTML)


Latest version:
<http://www.w3.org/TR/WAI-WEBCONTENT>

Previous version:
<http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990324>

Editors:
Wendy Chisholm, [Trace R & D Center](#), University of Wisconsin -- Madison
Gregg Vanderheiden, [Trace R & D Center](#), University of Wisconsin -- Madison
Ian Jacobs, [W3C](#)

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W3C Recommendation



Web Content Accessibility Guidelines (WCAG) 2.0

W3C Recommendation 11 December 2008

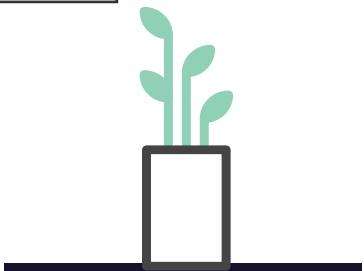
This version:
<http://www.w3.org/TR/2008/REC-WCAG20-20081211/>

Latest version:
<http://www.w3.org/TR/WCAG20/>

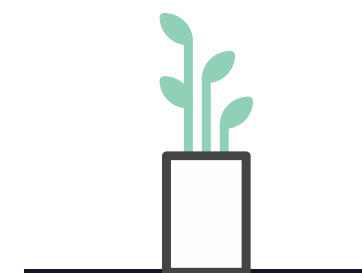
Previous version:
<http://www.w3.org/TR/2008/PR-WCAG20-20081103/>

Editors:
Ben Caldwell, Trace R&D Center, University of Wisconsin-Madison
Michael Cooper, W3C
Loretta Guarino Reid, Google, Inc.
Gregg Vanderheiden, Trace R&D Center, University of Wisconsin-Madison

Previous Editors:
Wendy Chisholm (until July 2006 while at W3C)
John Slatin (until June 2006 while at Accessibility Institute, University of Texas at Austin)
Jason White (until June 2005 while at University of Melbourne)



한국형 웹콘텐츠 접근성 지침



유엔(UN) 인권의 날 (12.10) 기념




TTA Standard

정보통신단체표준
TTAS.OT-10.0003

제정일 : 2004년 12월 23일

한국형 웹 콘텐츠 접근성 지침 1.0
(Korean Web Contents Accessibility
Guideline 1.0)

 한국정보통신기술협회
Telecommunications Technology Association

한국정보통신표준
KICS.OT-10.0003/R1

제정일 : 2010년 12월 31일

한국형 웹 콘텐츠 접근성 지침 2.0
Korean Web Content
Accessibility Guidelines 2.0


방송통신위원회

TTA Standard

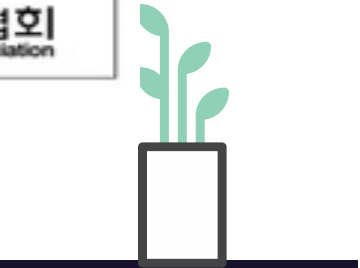
정보통신단체표준(국문표준)
TTAK.OT-10.0003/R2

개정일: 2013년 12월 18일

한국형 웹 콘텐츠 접근성 지침 2.1
Korean Web Content
Accessibility Guidelines 2.1

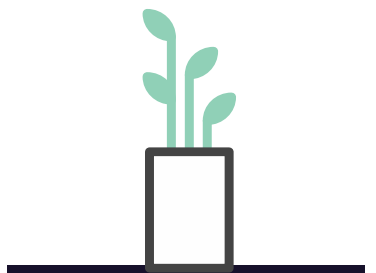
 한국정보통신기술협회
Telecommunications Technology Association

Future access to information technology trends and outlook

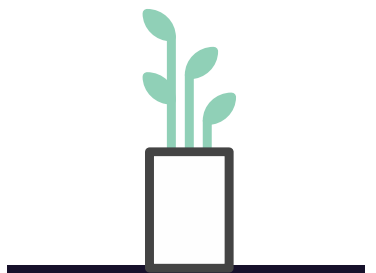


“ 웹 콘텐츠 접근성 가이드 라인”의 버전이 업데이트 되면서
신기술을 고려한 형태로 발전되었으나

아직도 ... 부족하다.



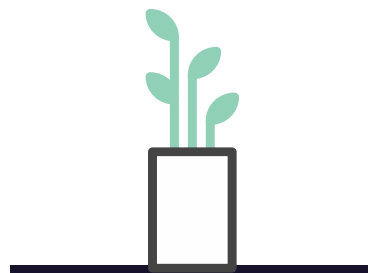
- » **RIA**의 동적인 **웹 애플리케이션 접근성 보장**을 위한 지침이 부족
- » Ajax를 통한 **실시간 변경 콘텐츠**를 못 읽을 수 있음
- » 페이지 콘텐츠 중 **일부만 변경 시**, 동일한 내용을 계속 읽어야 하는 문제 발생
- » 화면 확대 사용자의 경우, **가시 범위 밖의 콘텐츠 변경 내용**을 알 수 없음.



WAI-ARIA

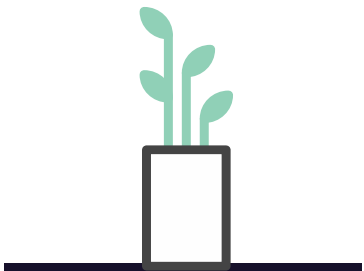
Web Accessibility Initiative
Accessible Rich Internet Applications

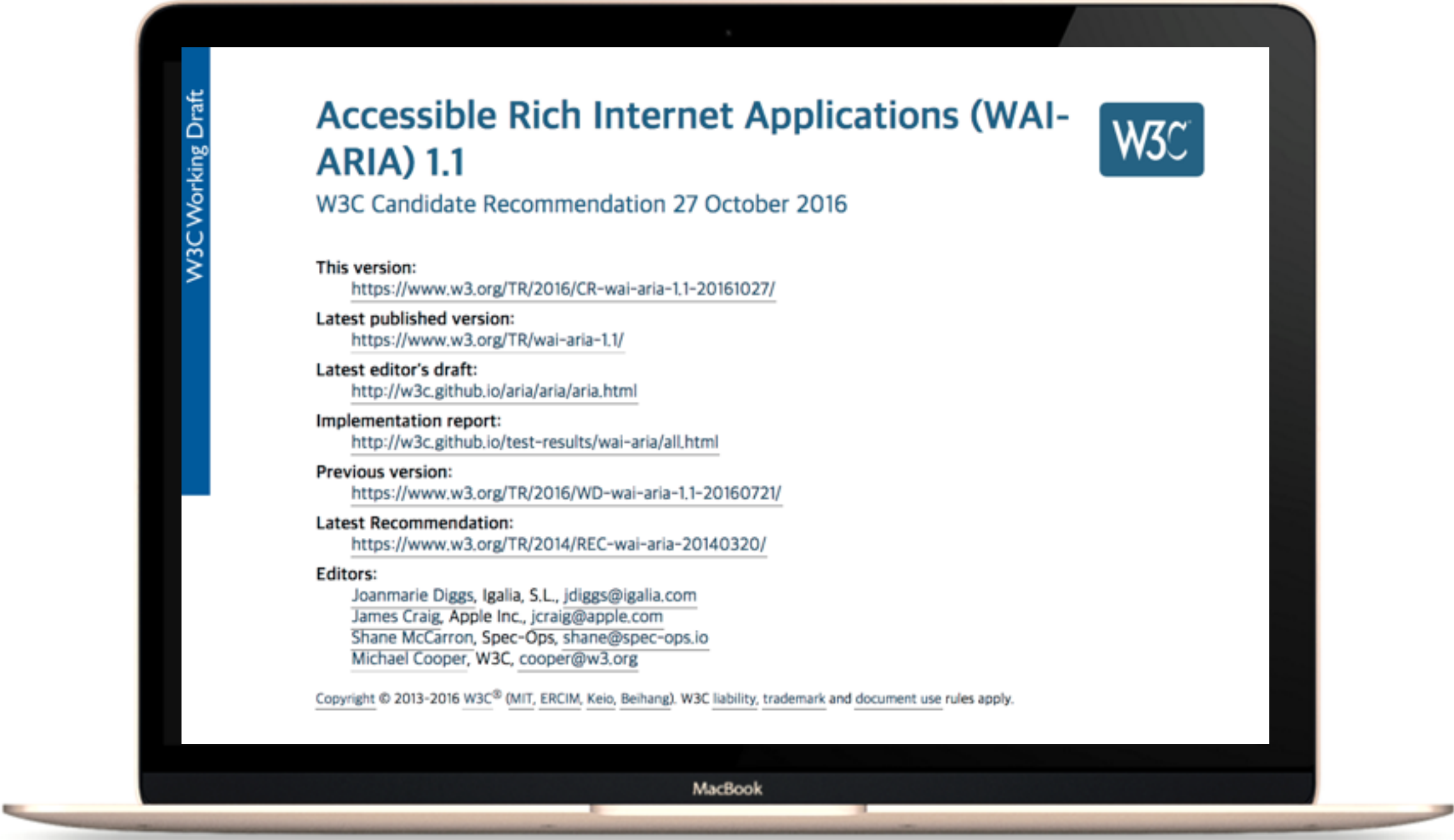
RIA를 위한 접/근/성/권/고/안



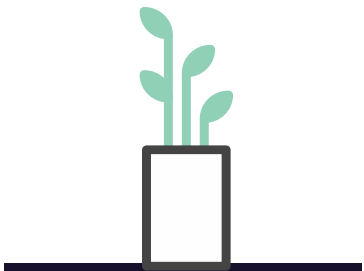


<https://www.w3.org/TR/wai-aria/>



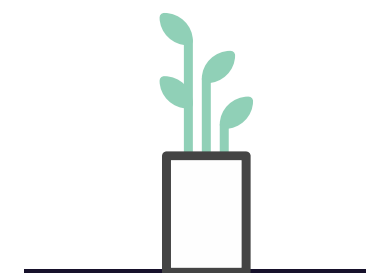


<https://www.w3.org/TR/wai-aria-1.1/>

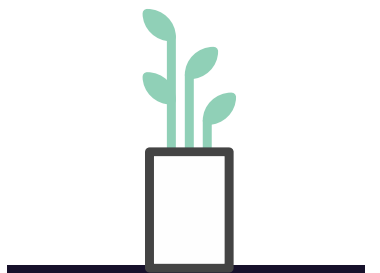


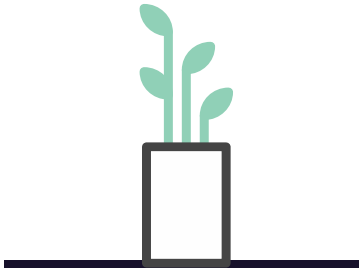
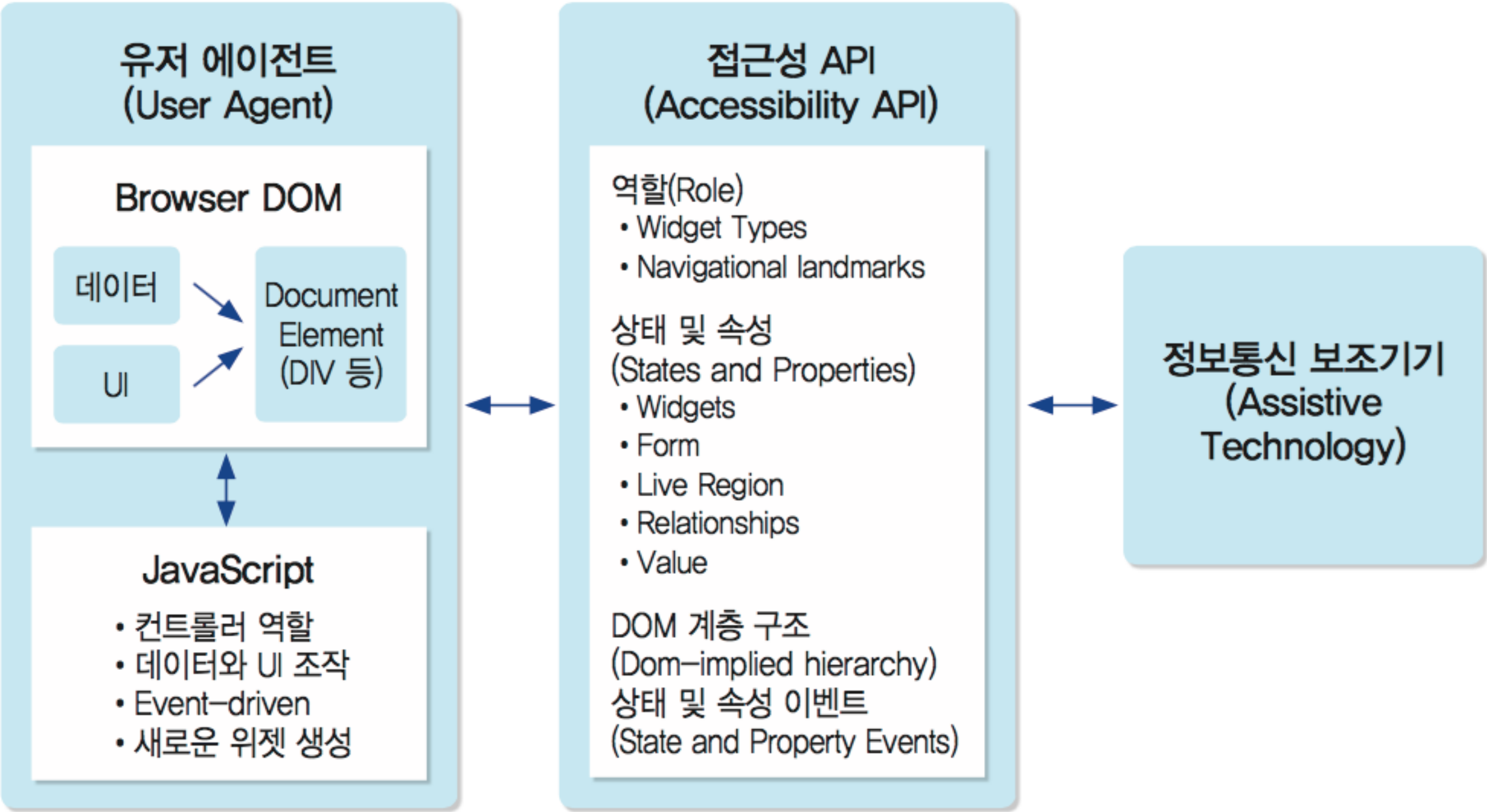


A/R/I/A의 목적



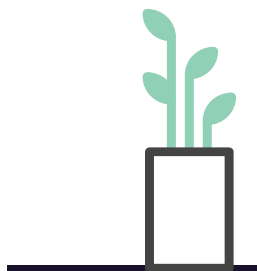
마크업에 **역할(Role)**, **속성(Property)**, **상태(State)** 정보를 추가하여
스크린 리더 및 **보조 기기** 등에서 **접근성 및 상호 운용성**을 향상시키고
보다 나은 **사용자 경험(User Experience)**을 제공하기 위함

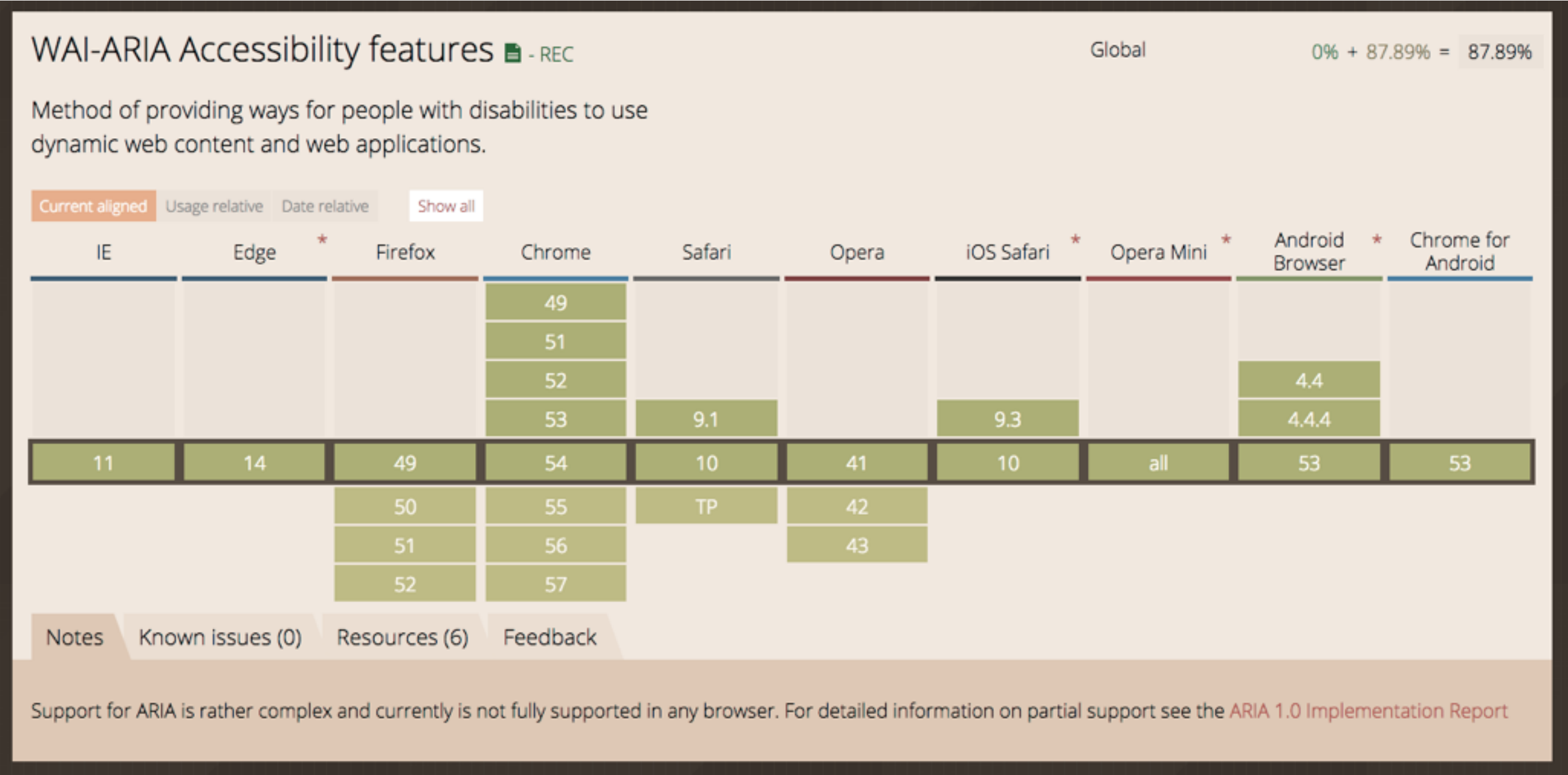






지/원/현/황/

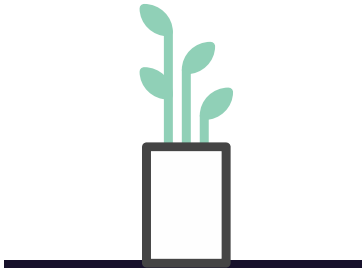




<http://caniuse.com/#search=wai-aria>

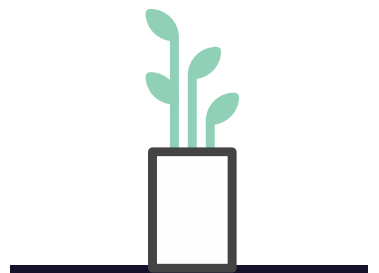


Combo	Versions	Reliability
JAWS IE	JAWS 17.0.2619 with IE11	79%
JAWS Firefox	JAWS 17.0.2619 with FF48	71%
NVDA IE	NVDA 2016.2 with IE11	64%
NVDA Firefox	NVDA 2016.2 with FF48	67%
VoiceOver Mac	VoiceOver OSX 10.11 with Safari 9.1.2	67%
VoiceOver iOS	VoiceOver iOS 9.1 with Safari iOS 9.1	55%
WindowEyes IE	WindowEyes 9.2 with IE11	74%
Dolphin IE	Dolphin SR 15.05 with IE11	52%
SaToGo IE	SaToGo 3.4.96.0 with IE11	25%
Average	Including older versions	64%



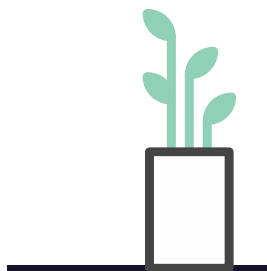
<http://www.powermapper.com/tests/screen-readers/aria/>

A/R/I/A의 3가지 기능



역할 Role

- 특정 요소(Element)에 역할을 정의하는 것
- 역할을 부여하여 사용자에게 정보를 제공
- 부여된 역할은 동적으로 변경할 수 없음



메뉴 정의 ♦ role="menu"

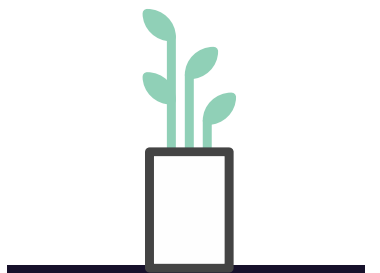
```
<div class="user_menu" role="menu"...>
```

경고 대화상자 정의 ♦ role="alertdialog"

```
<div id="auth_error" role="alertdialog"...>
```

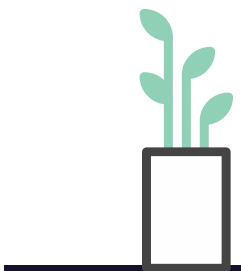
버튼 정의 ♦ role="button"

```
<div class="btn_01" role="button"...>
```



속성 Properties & 상태 States

- 요소(Element)가 기본적으로 갖고 있는 특징이나 상황
- 속성과 상태는 “aria-*” 접두어를 가진다.
- 상태는 요소의 상황을 나타내므로 애플리케이션이 실행 중에 자주 바뀌는 반면, 속성은 상대적으로 바뀌는 경우가 드물다.



속성 Properties

필수 항목 속성 ◆ aria-required

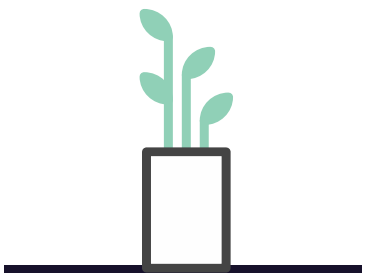
```
<input type="checkbox" aria-required="true">
```

추가 설명 속성 ◆ aria-describedby

```
<input type="text" aria-describedby="reference">  
<div id="reference">추가설명</div>
```

그룹 제목 속성 ◆ aria-label

```
<div role="group" aria-label="그룹제목">
```





상태 States

확장되어 있는 상태의 탭패널 ◆ `aria-expanded="true"`

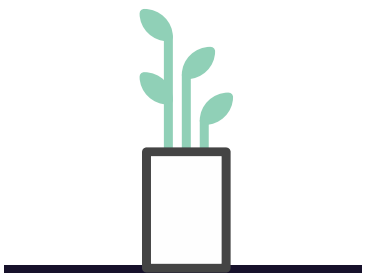
```
<div role="tabpanel" aria-expanded="true">
```

오류가 발생한 상태의 입력상자 ◆ `aria-invalid="true"`

```
<input type="text" aria-invalid="true">
```

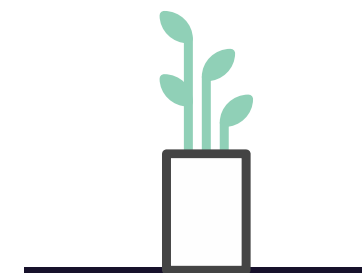
선택된 상태의 토글버튼 ◆ `aria-pressed="true"`

```
<button aria-pressed="true">
```





How to Use ARIA의 사용

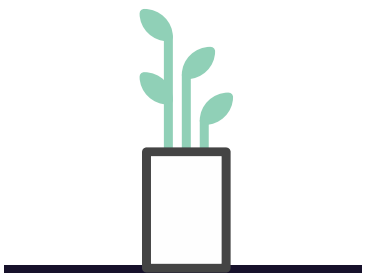




A/R/I/A와H/T/M/L/5

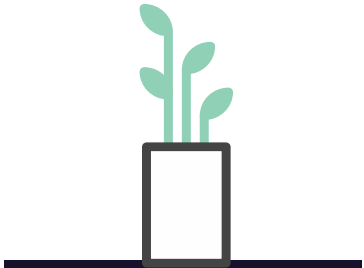
ARIA 역할(role)과 HTML5 섹션 요소를 중복해서 사용하지 않는다

```
<nav role="navigation">
```



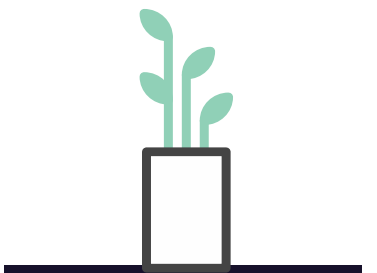
H/T/M/L요소의기능변경제한

```
<h1 role="button">버튼</h1>
```



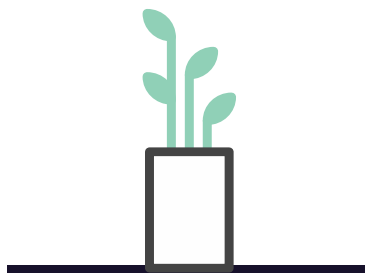
키/보/드/사/용/보/장

```
<span role="button" tabindex="0">버튼</span>
```

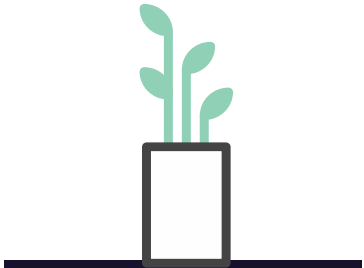


레이블 제공

```
<div>  
  <div id="user-name">이름</div>  
  <input type="text" id="name"  
    aria-labelledby="user-name">  
</div>
```



A/R/I/A/활/용/예/시

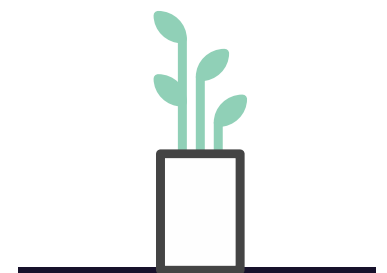




NAVER

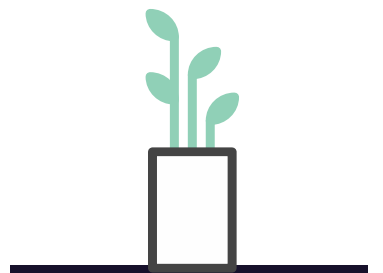
11	@naver.com
5~20자의 영문 소문자, 숫자와 특수기호(_),(-)만 사용 가능합니다.	
●●●	사용불가
6~16자 영문 대 소문자, 숫자, 특수문자를 사용하세요.	
비밀번호 재확인	
필수 정보입니다.	

<https://nid.naver.com/user2/join.nhn?m=begin>



```
<label for="usr-pwd">비밀번호</label>  
<input type="password" id="usr-pwd" name="usr-pwd"  
      aria-describedby="message">  
<span id="message" class="guide">  
    6~12자 이내로 영문, 숫자를 혼합하여 사용  
</span>
```

<http://seminar1505.publisher.name/aria-alert.html>

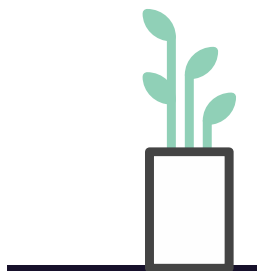




WAI-ARIA SAMPLE 데이터 검증결과



「예제로 살펴보는 WAI-ARIA」 사/례/집/제작/배/경




```
<div>  
    
  <span id="flower">  
    Van Gogh's oil painting of sunflowers  
  </span>  
</div>
```



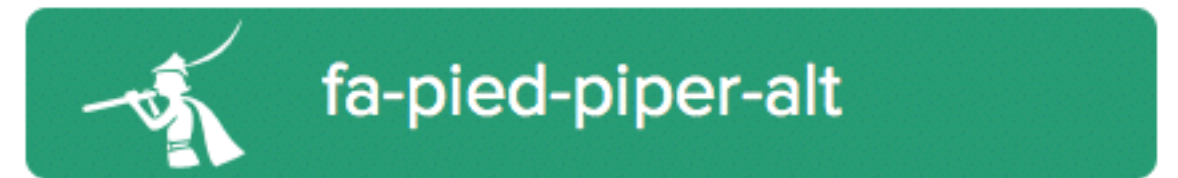
https://www.w3.org/WAI/GL/wiki/Using_aria-labelledby_to_provide_a_text_alternative_for_non-text_content





```
<a href="http://www.facebook.com">  
  <span role="img"  
    aria-label="Connect via Facebook">  
  </span>  
</a>  
<a href="http://www.twitter.com">  
  <span role="img"  
    aria-label="Connect via Twitter">  
  </span>  
</a>
```

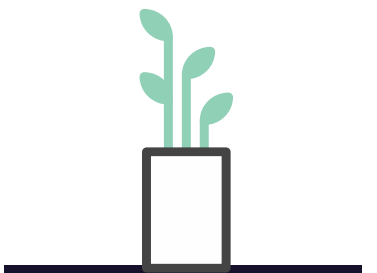




```
<p>  
  <i class="fa fa-pied-piper-alt" aria-hidden="true"></i>  
  fa-pied-piper-alt  
</p>
```

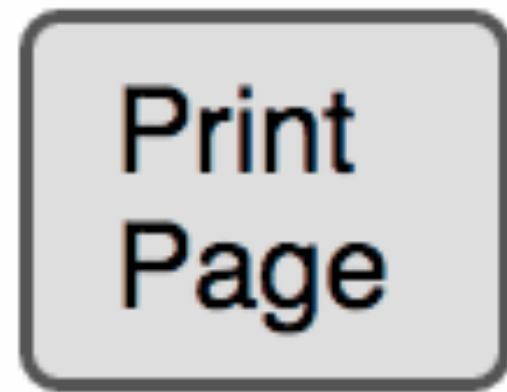


<http://fontawesome.io/accessibility/>



Technology Conference on
Information Accessibility 2016

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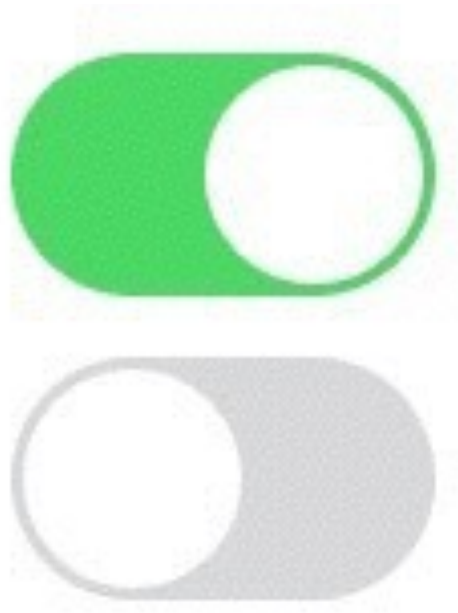


```
<div role="button" tabindex="0">  
  Print Page  
</div>
```



<https://www.w3.org/TR/2016/WD-wai-aria-practices-1.1-20160317/examples/button/button.html>





```
<div role="button" tabindex="0"  
    aria-pressed="true">  
    Button  
</div>
```



<https://www.w3.org/TR/2016/WD-wai-aria-practices-1.1-20160317/examples/button/button.html>



Username

Notes:

Also known as User ID

```
<span id="tip" class="tooltip" role="tooltip">  
  Also known as User ID  
</span>  
<input id="user-name" name="user-name" type="text"  
  aria-describedby="tip">
```



<http://accessibility.athena-ict.com/aria/examples/tooltip.shtml>



Prices

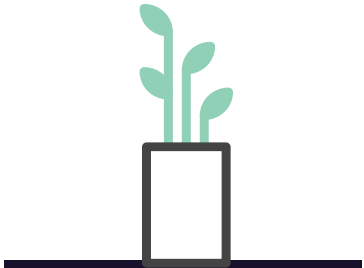
Features

Features

List of product features....

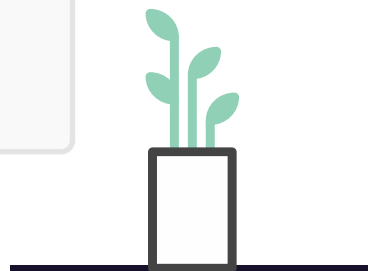


<http://accessibility.athena-ict.com/aria/examples/tabpanel2.shtml>





```
<ul class="tablist" role="tablist">
  <li id="tab1" role="tab" tabindex="0"
    aria-controls="panel1">Prices</li>
  <li id="tab2" role="tab" tabindex="0"
    aria-controls="panel2">Features</li>
</ul>
<div id="panel1" role="tabpanel" aria-labelledby="tab1">
  <h3>Prices</h3>
  . . . . .
</div>
<div id="panel2" role="tabpanel" aria-labelledby="tab2">
  <h3>Features</h3>
  . . . . .
</div>
```

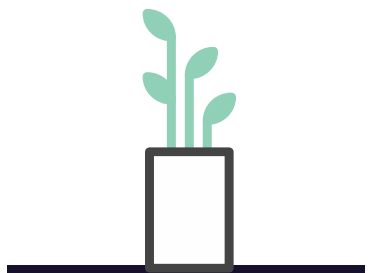




Pizza Crust

- ☐ Regular crust
- ☒ Deep dish
- ☐ Thin crust

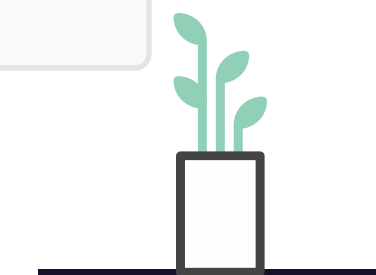
<https://www.w3.org/TR/wai-aria-practices-1.1/examples/radio/radio.html>



```
<div role="radiogroup" aria-labelledby="gdesc">  
  <h3 id="gdesc">Pizza Crust</h3>  
  <div role="radio" tabindex="-1" aria-checked="false">  
    Regular crust  
  </div>  
  <div role="radio" tabindex="0" aria-checked="true">  
    Deep dish  
  </div>  
  <div role="radio" tabindex="-1" aria-checked="false">  
    Thin crust  
  </div>  
</div>
```



https://www.w3.org/WAI/GL/wiki/Using_aria-describedby_for_link_purpose



Annual Report 2016

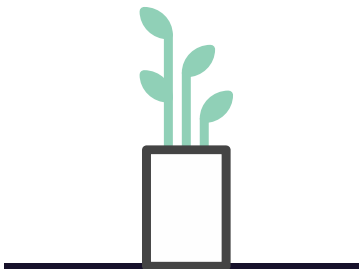
- [PDF](#)
- [RTF](#)

```
<h3 id="annrep2016">Annual Report 2016</h3>  
<ul>  
  <li>  
    <a href="annrep2016.pdf"  
      aria-describedby="annrep2016">PDF</a>  
  </li>  
  <li>  
    <a href="annrep2016.rtf"  
      aria-describedby="annrep2016">RTF</a>  
  </li>  
</ul>
```

유엔(UN) 인권의 날 (12.10) 기념

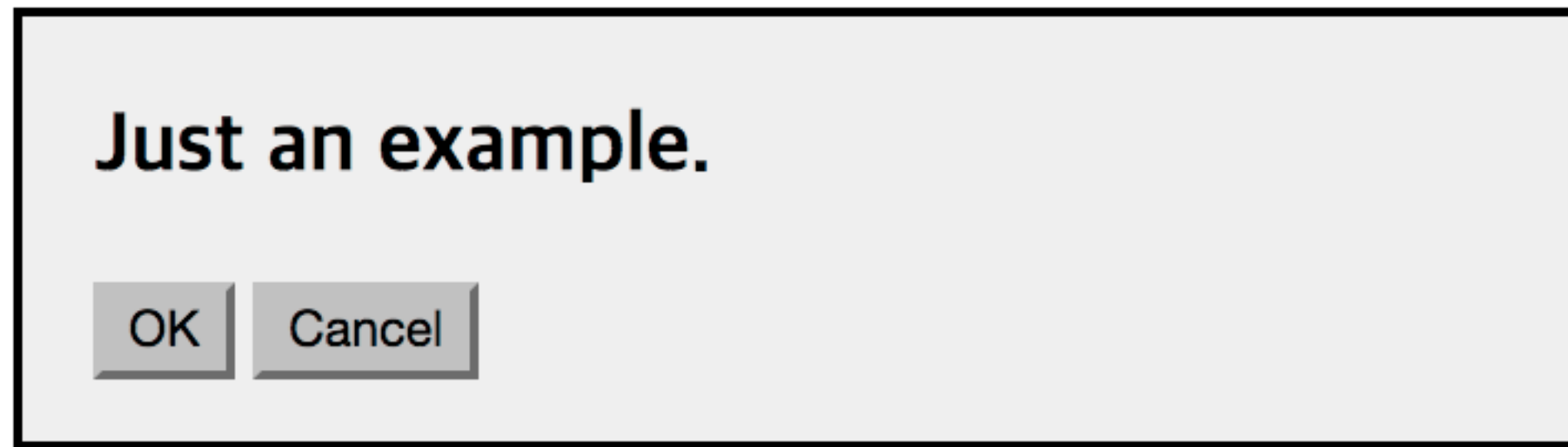


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https://www.w3.org/WAI/GL/wiki/Using_aria-describedby_for_link_purpose

Display a dialog

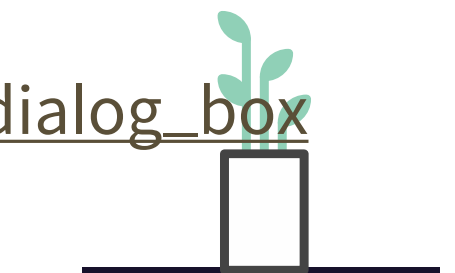


https://www.w3.org/WAI/GL/wiki/Using_ARIA_role%3Ddialog_to_implement_a_modal_dialog_box



```
<a onclick="toggleDialog('show');" href="#">
  Display a dialog
</a>
<div tabindex="-1" style="display:none" id="box"role="dialog"
  class="box-hidden" aria-labelledby="myDialog">
  <h3 id="myDialog">Just an example.</h3>
  <button onclick="toggleDialog('hide');">OK</button>
  <button onclick="toggleDialog('hide');">Cancel</button>
</div>
```

https://www.w3.org/WAI/GL/wiki/Using_ARIA_role%3Ddialog_to_implement_a_modal_dialog_box





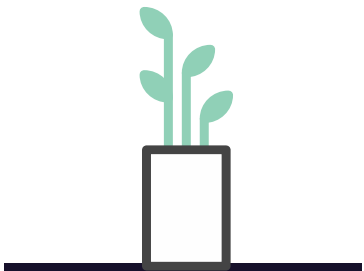
EXAMPLE:

Column one has the location and size of accommodation, other columns show the type and number of properties available.

Paris: Availability of holiday accommodation

	Studio	Apt	Chalet	Villa
1 bedroom	11	20	25	23
2 bedroom	-	43	52	32
3 bedroom	-	13	15	40

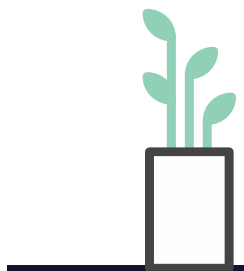
<https://www.w3.org/WAI/tutorials/tables/caption-summary/>



```
<p id="tblDesc">  
  Column one has the location and size of  
  accommodation, other columns show the type  
  and number of properties available.  
</p>  
  
<table aria-describedby="tblDesc">  
  . . . . .  
</table>
```



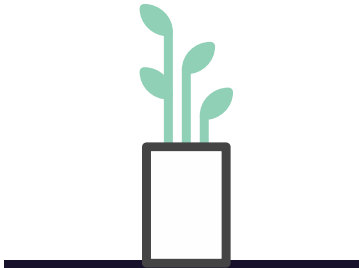
<https://www.w3.org/WAI/tutorials/tables/caption-summary/>





Comparison of Rental Car Rates

	Alamo	Budget	National	Avis	Hertz
Economy cars	\$67/day	\$68/day	\$72/day	\$74/day	\$74/day
Compact cars	\$68/day	\$69/day	\$74/day	\$76/day	\$76/day
Mid-sized cars	\$79/day	\$80/day	\$83/day	\$85/day	\$85/day
Full-sized cars	\$82/day	\$83/day	\$89/day	\$91/day	\$91/day

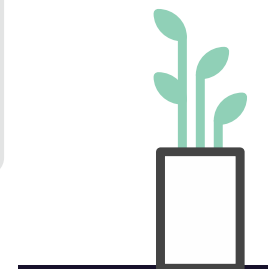


https://www.w3.org/WAI/GL/wiki/Using_aria-describedby_for_link_purpose



```
<table>
  <tr>
    <th></th>
    <th id="c1">Avis</th>
    <th id="c2">Hertz</th>
  </tr>
  <tr>
    <th id="r1">Economy cars</th>
    <td aria-describedby="c1 r1">$67/day</td>
    <td aria-describedby="c2 r1">$68/day</td>
  </tr>
</table>
```

https://www.w3.org/WAI/GL/wiki/Using_aria-describedby_for_link_purpose





Example Start

Number Guessing Game

Instructions: In this game you guess a number between 1 an 10 and then press the "Check My Guess" button to check your responses. An ARIA dialog box will display the results of your guess. To start over again to press the "Play Again" button.

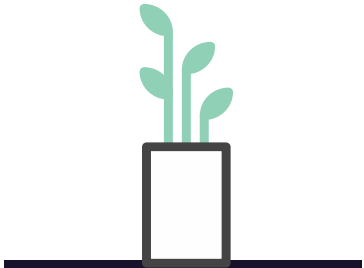
Guess a number between 1 and 10

'9' is too high. Try a lower number.

Check My Guess

Play Again

Example End





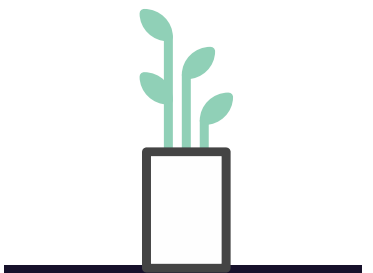
```
<div>
  <p class="input-number">
    <label id="guess-label" for="guess-text">
      Guess a number between 1 and 10
    </label>
    <input type="text" aria-labelledby="guess-label"
      id="guess-text" aria-invalid="false">
    <p id="guess-alert" role="alert" class="feedback"></p>
    <p class="input-number">
      <input type="button" id="guess-check"
        class="button" value="Check My Guess">
      <input type="button" id="guess-again"
        class="button" value="Play Again">
    </p>
  </div>
```



- » 국내에도 이런 형식의 예제가 있다면 ARIA의 적용이 좀 더 활발해 지지는 않을까?
- » 텍스트 정보 이외에 웹에서 직접 차이를 확인할 수 있도록 소스를 공개를 하면 어떨까?
- » 많은 개발자들이 집단지성을 활용해 더 좋은 예제를 생산해 낼 수 있다면 접근성의 미래가 좀더 밝아지진 않을까?

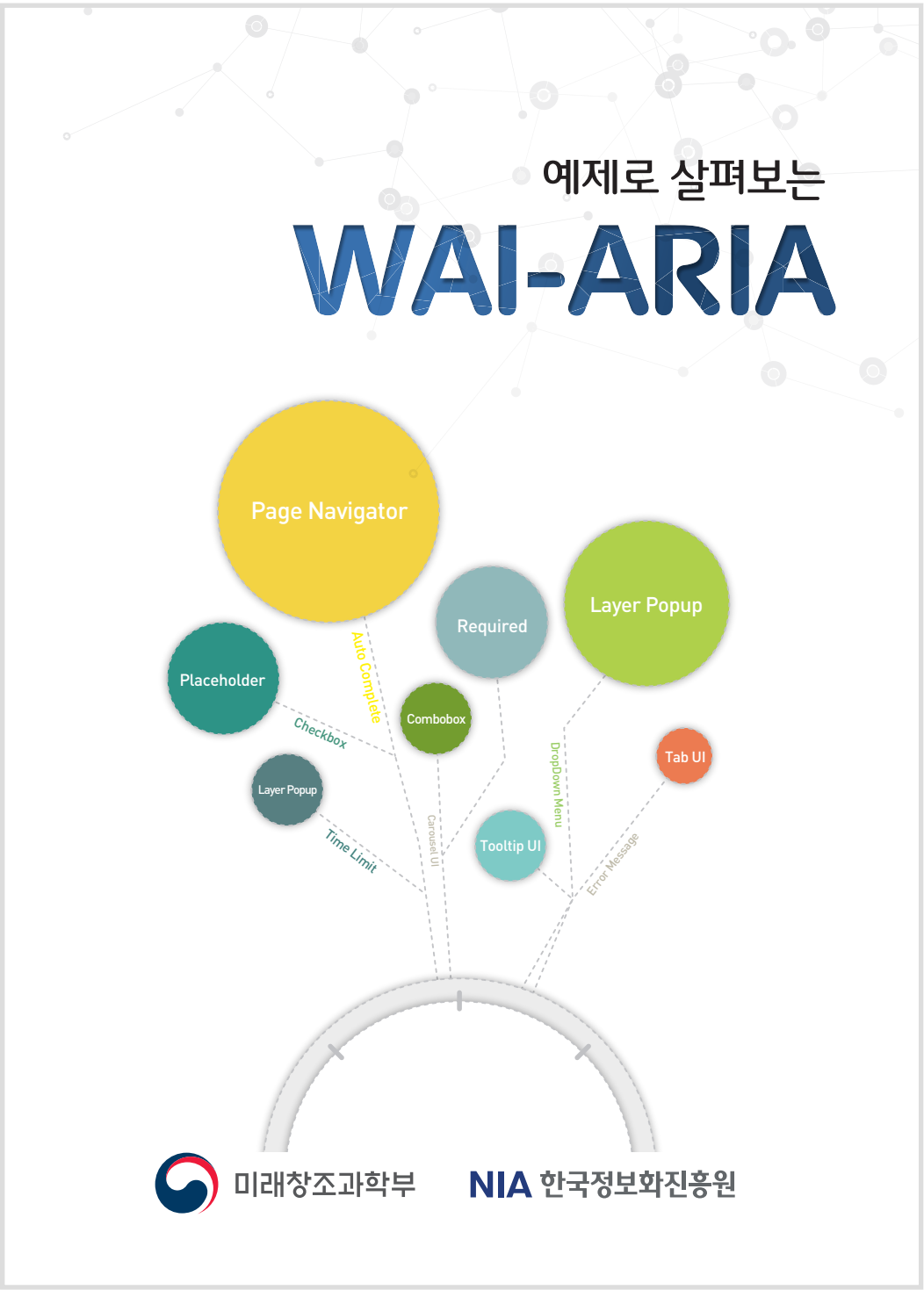


고민...또 고민...

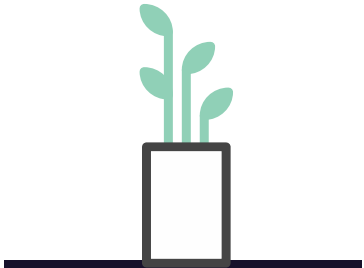


ARIA 사례/집

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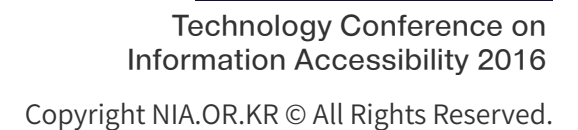
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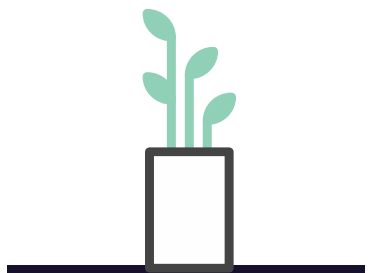
Technology Conference on
Information Accessibility 2016

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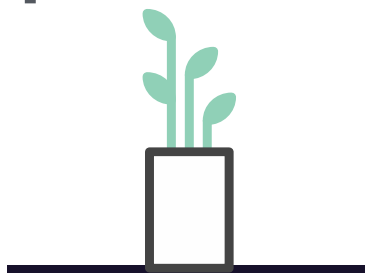


<https://github.com/niawa/ARIA>



“ 접근성 ”에 대한 애정과 관심이 있는 많은 분들의
참여와 응원을 부탁드립니다.

모두가 행복한 나라
그런 나라가 우리나라 였으면 좋겠습니다.





/감/사/합/니/다/

