

## Comparison of Applying the Skip Navigation Links in the Context of the Websites' Accessibility of Central Public Administration Bodies in the Bratislava Region between the Years 2014 and 2017

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**Abstract:** *The study focuses in its main aim on seeking of differences in deficits relating to applying the skip navigation mechanism on the websites of the central public administration bodies in the Bratislava Region in the context of improving the websites accessibility between the years 2014 and 2017. It consists of two separate parts. The first part presents a basic introduction to the questions of skip navigation links, with the key attention paid to the following three main areas: applying of skip navigation links, visual hiding of skip navigation links, and web browsers' bug related to skip navigation links. The second part of the study concentrates on the basis of a temporal analysis of differences in applying the skip navigation links on the websites of the central public administration bodies in the Bratislava Region on the processes focused on detection of potential deficits and gaps in the websites' accessibility or related possible non-compliance with the legislation in force.*

**Key Words:** *Websites; Websites' Accessibility; Skip Navigation Links; Public Administration; Central Public Administration Bodies; Compliance with Legislation in Force; Analysis; Period between Years 2014 and 2017; the Bratislava Region.*

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### Introduction

The on-line form of presentation and communication of the public administration authorities via Internet belongs not only to the most effective forms of communications – in relation to the territorial impact of the communicated information, but also to the most problematic – in the context of technical realisation due to a number of specific standards required by handicapped web users with various forms of disabilities. In the following study the author focuses on the questions of applying the skip navigation links as key elements by building the websites.

While sighted web users use their eyes as a built-in skip navigation mechanism which enables them to bypass several links with only one click or to move directly to the link they want to reach with the mouse, for users with some forms of visual or motor disabilities means bypassing the navigation links or direct browsing the website a very serious technical problem. Importance and wide-social interest in solving this problem is reflected also in the adopted related legislation which is in the Slovak Republic represented by the latest Ministerial Decree of the Ministry of Finance of the Slovak Republic No. 55/2014 Coll. of Standards for Information Systems of Public Administration issued on March 4<sup>th</sup>, 2014, and effective from March 15<sup>th</sup>, 2014.<sup>1</sup>

The aim of the study is to analyse the differences in applying the skip navigation links on the websites of the central public administration bodies in the Bratislava Region between the years 2014 and 2017. In the context of the research questions we define the main hypothesis as follows: *Homepages of the central public administration bodies in the Bratislava Region have applied the skip navigation links mechanism technically more correctly in year 2017 than in year 2014.*

### **Skip navigation links**

The following part of the study familiarizes the readers with the main questions of applying of skip navigation links, visual hiding of skip navigation links, and web browsers' bug related to skip navigation links.

### ***Applying of skip navigation links***

The idea of applying the skip navigation links is simple: they serve to provide a link at the top of the webpage which jumps the user down to an anchor or target at the beginning of the main content. For the most part it seems to be easy, though there is more than one way to accomplish the goal. From the technical view the process of creating the skip navigation link could be explained through a HTML code as it is shown in the following example:<sup>2</sup>

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<sup>1</sup> See *Výnos Ministerstva financií Slovenskej republiky č. 55/2014 Z.z. o štandardoch pre informačné systémy verejnej správy zo 4. marca 2014* [Ministerial Decree of the Ministry of Finance of the Slovak Republic No. 55/2014 Coll. of Standards for Information Systems of Public Administration issued on March 4<sup>th</sup>, 2014].

<sup>2</sup> "Skip Navigation" Links. In: *WebAIM: Web Accessibility in Mind* [online]. 2013-10-25 [cit. 2017-09-01]. Available at: <http://webaim.org/techniques/skipnav/>; and KOPRLOVÁ, J. Applying the Skip Navigation Links in the Context of the Websites' Accessibility of Cen-

✚ HTML code:

```
<body>
<a href="#main-content">Skip to Main Content</a>
...
<main id="main-content">
  <h1>Heading</h1>
  <p>This is the first paragraph.</p>
```

### **Visual hiding of skip navigation links**

By building the website the most required form of applying the skip navigation mechanism is to make it invisible. For hiding the skip links there are several techniques to be applied. Two parallel conditions should be necessarily taken into account in this process: the first one means the requirement of visual hiding of the skip links content, and the second one represents the requirement of accessibility of the skip links content for screen readers. Nowadays, the best known and most often used CSS code “*visibility: hidden; display: none;*” satisfies the only first one from the two above mentioned conditions and so it cannot be recommended in relation to its non-visibility and inaccessibility for screen readers. An effective solution of this problem, satisfying the both conditions, offer the following HTML and CSS codes:<sup>3</sup>

✚ HTML code:

```
<div class="hidden">This text is hidden.</div>
```

✚ CSS code:

```
.hidden {
  position: absolute;
  left: -10000px;
  top: auto;
  width: 1px;
  height: 1px;
```

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tral State Administration Bodies in the Slovak Republic. *Societas et iurisprudencia* [online]. 2014, roč. 2, č. 2, pp. 134-135 [cit. 2017-09-01]. ISSN 1339-5467. Available at: <http://sei.iuridica.truni.sk/archive/2014/02/SOCIETAS-ET-IURISPRUDENTIA-2014-02.pdf>.

<sup>3</sup> CSS in Action: Invisible Content Just for Screen Reader Users. In: *WebAIM: Web Accessibility in Mind* [online]. 2014-12-11 [cit. 2017-09-01]. Available at: <http://webaim.org/techniques/css/invisiblecontent/>; and KOPRLOVÁ, J. Applying the Skip Navigation Links in the Context of the Websites' Accessibility of Central State Administration Bodies in the Slovak Republic. *Societas et iurisprudencia* [online]. 2014, roč. 2, č. 2, p. 135 [cit. 2017-09-01]. ISSN 1339-5467. Available at: <http://sei.iuridica.truni.sk/archive/2014/02/SOCIETAS-ET-IURISPRUDENTIA-2014-02.pdf>.

```
overflow: hidden;  
}.
```

By generally recommended requirement to make the skip navigation links invisible until they receive keyboard focus, the following HTML and CSS codes should be applied:<sup>4</sup>

✚ HTML code:  
`<div id="hidden"><a href="#main-content">Skip to Main Content  
</a></div>;`

✚ CSS code:  
`#hidden a {  
 position: absolute;  
 left: -10000px;  
 top: auto;  
 width: 1px;  
 height: 1px;  
 overflow: hidden;  
}  
#hidden a:focus {  
 position: static;  
 width: auto;  
 height: auto;  
}.`

This means a very useful solution which could be preferred above all for sighted keyboard users those cannot use a mouse.

### ***Web browsers' bug related to skip navigation links***

The recommended above mentioned skip navigation links related solutions are working effective in most web browsers, but nowadays there still exists one bug which lowers the efficiency of their applying through disrupting the logical order by browsing or reading the webpage links. This makes the webpage browsing with keyboard distortable or even non-effective. An appropriate solution for healing this bug offers the HTML code as follows:<sup>5</sup>

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<sup>4</sup> CSS in Action: Invisible Content Just for Screen Reader Users. In: *WebAIM: Web Accessibility in Mind* [online]. 2014-12-11 [cit. 2017-09-01]. Available at: <http://webaim.org/techniques/css/invisiblecontent/>.

<sup>5</sup> Skip Navigation Links (Updated 6/19/2009). In: *JimThatcher.com* [online]. 2014-09-16 [cit. 2017-09-01]. Available at: <http://www.jimthatcher.com/skipnav.htm>; and KOPRLO-



HTML code:

```
<body>
<a href="#main-content">Skip to Main Content</a>
...
<main id="main-content" tabindex="-1">
  <h1>Heading</h1>
  <p>This is the first paragraph.</p>
```

### Analysis of differences in applying the skip navigation links on the websites of the central public administration bodies in the Bratislava Region between the years 2014 and 2017

Our analysis of applying the skip navigation links on the websites of the central public administration bodies in the Bratislava Region has been legislatively based on the Ministerial Decree of the Ministry of Finance of the Slovak Republic No. 55/2014 Coll. of Standards for Information Systems of Public Administration issued on March 4<sup>th</sup>, 2014, and effective from March 15<sup>th</sup>, 2014, with the main attention laid on the § 14 Websites' Accessibility (in the Slovak original "§ 14 Prístupnosť webových stránok"), including related appendix Guideline 13. Providing Clear Navigation Mechanisms (in the Slovak original "Pravidlo 13. Poskytovanie prehľadného mechanizmu navigácie").<sup>6</sup>

Our analysis was realised in the early September 2017 by applying web browser Internet Explorer 11 (with style sheets and active elements turned off). Complete sample was represented by all websites of all the central public administration bodies in the Bratislava Region, while re-

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VÁ, J. Applying the Skip Navigation Links in the Context of the Websites' Accessibility of Central State Administration Bodies in the Slovak Republic. *Societas et iurisprudencia* [online]. 2014, roč. 2, č. 2, pp. 136-137 [cit. 2017-09-01]. ISSN 1339-5467. Available at: <http://sei.iuridica.truni.sk/archive/2014/02/SOCIETAS-ET-IURISPRUDENTIA-2014-02.pdf>.

<sup>6</sup> Compare with KOPRLA, M. and J. KOPRLOVÁ. Analýza prístupnosti webových stránok vybraných webových sídiel verejnej správy z pohľadu administratívno-správneho členenia Slovenskej republiky. *Societas et res publica* [online]. 2013, roč. 2, č. 1, pp. 93-160 [cit. 2015-09-01]. ISSN 1338-6530. Available at: <http://serp.fsv.ucm.sk/archive/2013/01/SOCIETAS-ET-RES-PUBLICA-2013-01.pdf>; and with KOPRLA, M. Prístupnosť webových stránok ako významný faktor zvyšovania konkurencieschopnosti. In: K. ĎURKOVÁ, A. BOBOVNICKÝ and A. ZAUŠKOVÁ, eds. *Inovácie a vedomostná spoločnosť/digitálny marketing – udržateľný rast a návrat investícií* [CD-ROM]. 1. vyd. Trnava: Univerzita sv. Cyrila a Metoda v Trnave, Fakulta masmediálnej komunikácie, 2012, pp. 49-63. ISBN 978-80-8105-454-9.

search sample was defined by all homepages of all the central public administration bodies in the Bratislava Region, namely of:<sup>7</sup>

- ✚ Central public administration body of Bratislava – Staré Mesto (<http://www.staremesto.sk/>);
- ✚ Central public administration body of Bratislava – Ružinov (<http://www.ruzinov.sk/>);
- ✚ Central public administration body of Bratislava – Nové Mesto (<http://www.banm.sk/>);
- ✚ Central public administration body of Bratislava – Karlova Ves (<https://www.karlovaves.sk/>);
- ✚ Central public administration body of Bratislava – Petržalka (<https://www.petrzalka.sk/>);
- ✚ Central public administration body of Malacky (<http://www.malacky.sk/>);
- ✚ Central public administration body of Pezinok (<http://www.pezinok.sk/>);
- ✚ Central public administration body of Senec (<https://www.senec.sk/>).

### ***Central public administration body of Bratislava – Staré Mesto***

Next figure displays homepage of the central public administration body of Bratislava – Staré Mesto, with style sheets and active elements turned off. There is no skip link applied.

Analysing the homepage of the central public administration body of Bratislava – Staré Mesto in context of using the skip navigation links following key findings could be detected:<sup>8</sup>

- ✚ Number of links before the main content: 2014: 75 links/2017: 69 links;
- ✚ Number of skip links: 2014: 0 links/2017: 0 links.

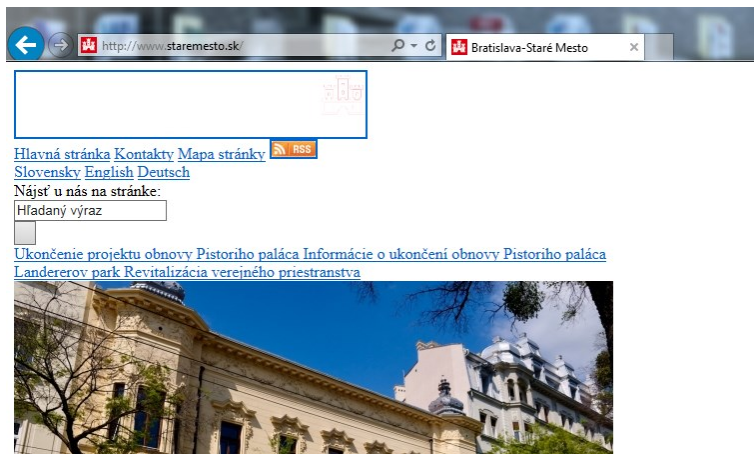
According to the presented results we can conclude that there is no skip navigation mechanism applied on the analysed homepage of the central public administration body of Bratislava – Staré Mesto. In relation to this finding we can recommend to add the skip navigation links in ac-

<sup>7</sup> See Zákon č. 575/2001 Z.z. o organizácii činnosti vlády a organizácii ústrednej štátnej správy v platnom znení [Act No. 575/2001 Coll. on Organization of the Activities of the Government and Organization of the Central Public Administration, as amended].

<sup>8</sup> Source code of the central public administration body website of Bratislava – Staré Mesto [online]. 2017 [cit. 2017-09-01]. Available at: <http://www.staremesto.sk/>.

cordance with the model examples shown in the previous part of the study named “Skip navigation links”.

Figure 1 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Bratislava – Staré Mesto



Source: Website (with style sheets and active elements turned off) of the central public administration body of *Bratislava – Staré Mesto* [online]. 2017 [cit. 2017-09-01]. Available at: <http://www.staremesto.sk/>.

### **Central public administration body of Bratislava – Ružinov**

Next figure displays homepage of the central public administration body of Bratislava – Ružinov, with style sheets and active elements turned off. The analysed skip link is marked by red rectangle.

Analysing the homepage of the central public administration body of Bratislava – Ružinov in context of using the skip navigation links following key findings could be detected:<sup>9</sup>

- Number of links before the main content: 2014: 147 links/2017: 155 links;
- Number of skip links: 2014: 1 link/2017: 1 link;
- Number of links before the first skip link: 2014: 0 links/2017: 0 links;
- Visual display of skip links: 2014: hidden/2017: hidden;

<sup>9</sup> Source code of the central public administration body website of *Bratislava – Ružinov* [online]. 2017 [cit. 2017-09-01]. Available at: <http://www.ruzinov.sk/>.

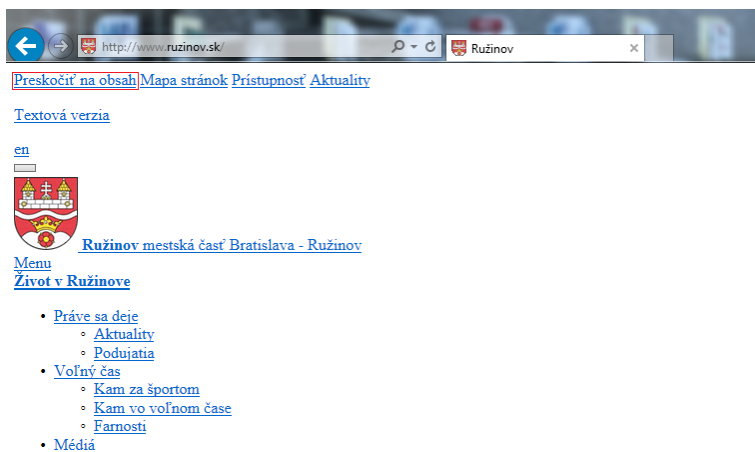
✚ HTML code of skip links:  

```
<a href="/sk/Home/index#main" title="Preskočiť na obsah"
class="sr-only" accesskey="s">Preskočiť na obsah</a>
<div class="left-column" id="main" role="main">
...
</div>
```

✚ CSS code of skip links:  

```
.sr-only {
  position: absolute;
  width: 1px;
  height: 1px;
  margin: -1px;
  padding: 0;
  overflow: hidden;
  clip: rect(0 0 0 0);
  border: 0;
}.
```

Figure 2 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Bratislava – Ružinov



Source: Website (with style sheets and active elements turned off) of the central public administration body of Bratislava – Ružinov [online]. 2017 [cit. 2017-09-01]. Available at: <http://www.ruzinov.sk/>.

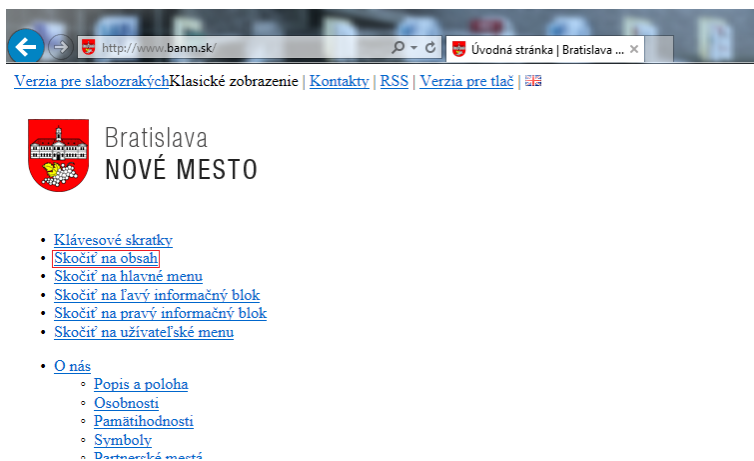
According to the presented results we can conclude that there is a skip navigation mechanism applied on the analysed homepage of the central public administration body of Bratislava – Ružinov which works

technically correctly. In relation to our finding we can recommend to add the attribute *tabindex="-1"* to website's target element and to replace CSS code *"clip: rect(0 0 0 0);"* with CSS code in accordance with the model examples shown in the previous parts of the study named "Visual hiding of skip navigation links" and "Web browsers' bug related to skip navigation links", with the aim to eliminate the disrupted logical order by browsing or reading the webpage links that occurs by most of web browsers.

### **Central public administration body of Bratislava – Nové Mesto**

Next figure displays homepage of the central public administration body of Bratislava – Nové Mesto, with style sheets and active elements turned off. The analysed skip link is marked by red rectangle.

Figure 3 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Bratislava – Nové Mesto



Source: Website (with style sheets and active elements turned off) of the central public administration body of Bratislava – Nové Mesto [online]. 2017 [cit. 2017-09-01]. Available at: <http://www.banm.sk/>.

Analysing the homepage of the central public administration body of Bratislava – Nové Mesto in context of using the skip navigation links following key findings could be detected:<sup>10</sup>

<sup>10</sup> Source code of the central public administration body website of Bratislava – Nové Mesto [online]. 2017 [cit. 2017-09-01]. Available at: <http://www.banm.sk/>.

✚ Number of links before the main content: 2014: 137 links/2017: 147 links;


✚ Number of skip links: 2014: 5 links/2017: 5 links;

✚ Number of links before the first skip link: 2014: 7 links/2017: 7 links;

✚ Visual display of skip links: 2014: hidden/2017: hidden;

✚ HTML code of skip links:

```
<ul id="skratky" class="hide">
...
<li>
  <a href="#page" accesskey="0">Skočiť na obsah</a>
</li>
<li>
  <a href="#topmenu">Skočiť na hlavné menu</a>
</li>
<li>
  <a href="#left">Skočiť na ľavý informačný blok</a>
</li>
<li>
  <a href="#right">Skočiť na pravý informačný blok</a>
</li>
<li>
  <a href="#user-menu">Skočiť na užívateľské menu</a>
</li>
</ul>
<div id="topmenu">
...
</div>
<div id="left">
...
</div>
<div id="page">
...
</div>
<div id="right">
...
</div>
<div id="user-menu" class="menu menu2">
...
</div>;
```



 CSS code of skip links:  
.hide {  
    display: none;  
};

According to the presented results we can conclude that there is a skip navigation mechanism applied on the analysed homepage of the central public administration body of Bratislava – Nové Mesto, but it works technically incorrectly. In relation to our finding we can recommend to move the applied skip navigation links to the top of the website, then to add the attribute *tabindex="-1"* to website's target elements and to replace CSS code "*display: none;*" with CSS code in accordance with the model examples shown in the previous parts of the study named "Visual hiding of skip navigation links" and "Web browsers' bug related to skip navigation links", with the aim, firstly, to make the skip navigation links content accessible/visible for screen readers and, secondly, to eliminate the disrupted logical order by browsing or reading the webpage links that occurs by most of web browsers.

### ***Central public administration body of Bratislava – Karlova Ves***

Next figure displays homepage of the central public administration body of Bratislava – Karlova Ves, with style sheets and active elements turned off. There is no skip link applied.

Analysing the homepage of the central public administration body of Bratislava – Karlova Ves in context of using the skip navigation links following key findings could be detected:<sup>11</sup>

-  Number of links before the main content: 2014: 54 links/2017: 142 links;
-  Number of skip links: 2014: 1 link/2017: 0 links.

According to the presented results we can conclude that there is no skip navigation mechanism applied on the analysed homepage of the central public administration body of Bratislava – Karlova Ves. In relation to this finding we can recommend to add the skip navigation links in accordance with the model examples shown in the previous part of the study named "Skip navigation links".

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<sup>11</sup> Source code of the central public administration body website of *Bratislava – Karlova Ves* [online]. 2017 [cit. 2017-09-01]. Available at: <https://www.karlovaves.sk/>.

Figure 4 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Bratislava – Karlova Ves



Source: Website (with style sheets and active elements turned off) of the central public administration body of *Bratislava – Karlova Ves* [online]. 2017 [cit. 2017-09-01]. Available at: <https://www.karlovaves.sk/>.

### **Central public administration body of Bratislava – Petržalka**

Next figure displays homepage of the central public administration body of Bratislava – Petržalka, with style sheets and active elements turned off. There is no skip link applied.

Analysing the homepage of the central public administration body of Bratislava – Petržalka in context of using the skip navigation links following key findings could be detected:<sup>12</sup>

- ✚ Number of links before the main content: 2014: 26 links/2017: 45 links;
- ✚ Number of skip links: 2014: 0 links/2017: 0 links.

According to the presented results we can conclude that there is no skip navigation mechanism applied on the analysed homepage of the central public administration body of Bratislava – Petržalka. In relation to this finding we can recommend to add the skip navigation links in ac-

<sup>12</sup> Source code of the central public administration body website of *Bratislava – Petržalka* [online]. 2017 [cit. 2017-09-01]. Available at: <https://www.petrzalka.sk/>.

cordance with the model examples shown in the previous part of the study named “Skip navigation links”.

Figure 5 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Bratislava – Petržalka



Source: Website (with style sheets and active elements turned off) of the central public administration body of *Bratislava – Petržalka* [online]. 2017 [cit. 2017-09-01]. Available at: <https://www.petrzalka.sk/>.

### **Central public administration body of Malacky**

Next figure displays homepage of the central public administration body of Malacky, with style sheets and active elements turned off. The analysed skip link is marked by red rectangle.

Analysing the homepage of the central public administration body of Malacky in context of using the skip navigation links following key findings could be detected:<sup>13</sup>

- Number of links before the main content: 2014: 100 links/2017: 91 links;
- Number of skip links: 2014: 3 links/2017: 3 links;
- Number of links before the first skip link: 2014: 0 links/2017: 0 links;
- Visual display of skip links: 2014: hidden/2017: hidden;

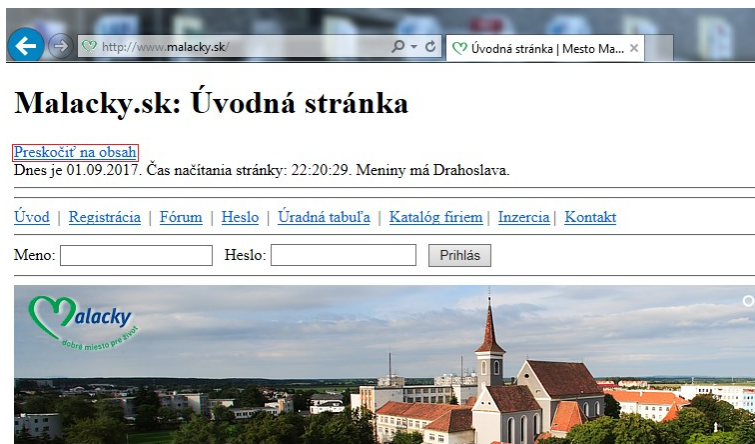
<sup>13</sup> Source code of the central public administration body website of *Malacky* [online]. 2017 [cit. 2017-09-01]. Available at: <http://www.malacky.sk/>.

- ✚ HTML code of skip links:  

```
<a href="#content" class="skip">Preskočiť na obsah</a>  
<a href="#content" class="skip">Preskočiť na obsah</a>  
<a href="#content" class="skip">Preskočiť na obsah</a>  
<a name="content"></a>;
```
- ✚ CSS code of skip links:  

```
.skip {  
    display: none;  
}
```

Figure 6 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Malacky



Source: Website (with style sheets and active elements turned off) of the central public administration body of *Malacky* [online]. 2017 [cit. 2017-09-01]. Available at: <http://www.malacky.sk/>.

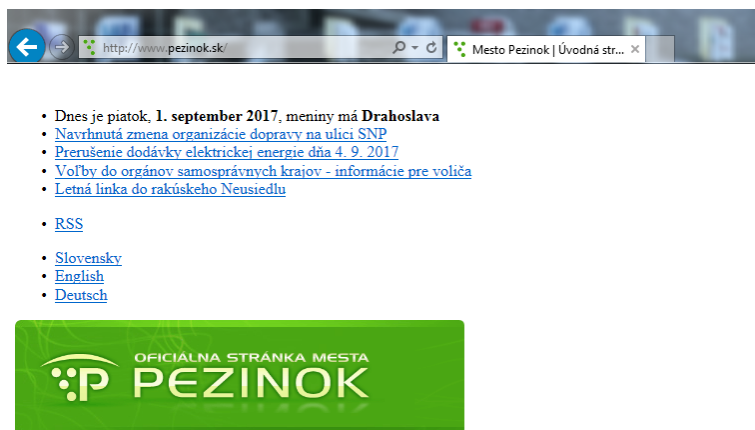
According to the presented results we can conclude that there is a skip navigation mechanism applied on the analysed homepage of the central public administration body of Malacky, but it works technically incorrectly. In relation to our finding we can recommend to add the attribute *tabindex="-1"* to website's target elements and to replace CSS code *"display: none;"* with CSS code in accordance with the model examples shown in the previous parts of the study named "Visual hiding of skip navigation links" and "Web browsers' bug related to skip navigation links", with the aim, firstly, to make the skip navigation links content accessible/visible for screen readers and, secondly, to eliminate the dis-

rupted logical order by browsing or reading the webpage links that occurs by most of web browsers.

### *Central public administration body of Pezinok*

Next figure displays homepage of the central public administration body of Pezinok, with style sheets and active elements turned off. There is no skip link applied.

Figure 7 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Pezinok



Source: Website (with style sheets and active elements turned off) of the central public administration body of *Pezinok* [online]. 2017 [cit. 2017-09-01]. Available at: <http://www.pezinok.sk/>.

Analysing the homepage of the central public administration body of Pezinok in context of using the skip navigation links following key findings could be detected:<sup>14</sup>

- ✚ Number of links before the main content: 2014: 39 links/2017: 43 links;
- ✚ Number of skip links: 2014: 0 links/2017: 0 links.

According to the presented results we can conclude that there is no skip navigation mechanism applied on the analysed homepage of the central public administration body of Pezinok. In relation to this finding we

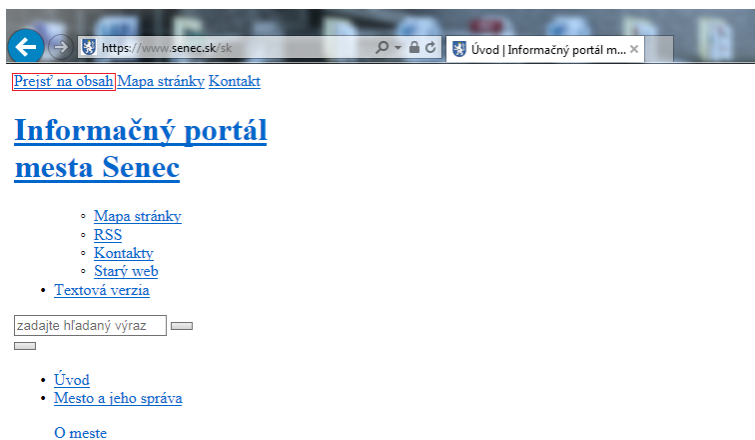
<sup>14</sup> Source code of the central public administration body website of *Pezinok* [online]. 2017 [cit. 2017-09-01]. Available at: <http://www.pezinok.sk/>.

can recommend to add the skip navigation links in accordance with the model examples shown in the previous part of the study named “Skip navigation links”.

### *Central public administration body of Senec*

Next figure displays homepage of the central public administration body of Senec, with style sheets and active elements turned off. The analysed skip link is marked by red rectangle.

Figure 8 Website (with style sheets and active elements turned off) of the Central Public Administration Body of Senec



Source: Website (with style sheets and active elements turned off) of the central public administration body of *Senec* [online]. 2017 [cit. 2017-09-01]. Available at: <https://www.senec.sk/>.

Analysing the homepage of the central public administration body of Senec in context of using the skip navigation links following key findings could be detected:<sup>15</sup>

- ✚ Number of links before the main content: 2014: 53 links/2017: 116 links;
- ✚ Number of skip links: 2014: 0 links/2017: 1 link;
- ✚ Number of links before the first skip link: 2014: –/2017: 0 links;
- ✚ Visual display of skip links: 2014: –/2017: hidden;

<sup>15</sup> Source code of the central public administration body website of *Senec* [online]. 2017 [cit. 2017-09-01]. Available at: <https://www.senec.sk/>.

- ✚ HTML code of skip links:

```
<div class="accesskey">
  <a href="#obsah" accesskey="o">Prejst' na obsah</a>
  ...
</div>
<a name="obsah"></a>;
```
- ✚ CSS code of skip links:

```
.accesskey {
  display: none;
}.
```

According to the presented results we can conclude that there is a skip navigation mechanism applied on the analysed homepage of the central public administration body of Senec, but it works technically incorrectly. In relation to our finding we can recommend to add the attribute *tabindex="-1"* to website's target element and to replace CSS code *"display: none;"* with CSS code in accordance with the model examples shown in the previous parts of the study named "Visual hiding of skip navigation links" and "Web browsers' bug related to skip navigation links", with the aim, firstly, to make the skip navigation links content accessible/visible for screen readers and, secondly, to eliminate the disrupted logical order by browsing or reading the webpage links that occurs by most of web browsers.

## Conclusion

In the study "Comparison of Applying the Skip Navigation Links in the Context of the Websites' Accessibility of Central Public Administration Bodies in the Bratislava Region between the Years 2014 and 2017" we have paid our attention in accordance with its main aim to seeking of differences in deficits relating to applying the skip navigation mechanism on the websites of the central public administration bodies in the Bratislava Region in the context of improving the websites accessibility between the years 2014 and 2017. In the context of our research questions we defined the main hypothesis as follows: *Homepages of the central public administration bodies in the Bratislava Region have applied the skip navigation links mechanism technically more correctly in year 2017 than in year 2014.*

According to the results and key findings presented in previous parts of our study we can underline the following final conclusions (valid as of September 1<sup>st</sup>, 2017), divided in to three separate groups:

*Homepages with the technically correctly working skip navigation mechanism* – for this group we can recommend to add the attribute *tabindex="-1"* to website's target elements which relates namely to only one central public administration body:

- ✚ Central public administration body of Bratislava – Ružinov.

*Homepages with the technically incorrectly working skip navigation mechanism* – for this group we can recommend to add the attribute *tabindex="-1"* to website's target elements and to replace CSS code *"display: none;"* with CSS code in accordance with the exactly in our study presented model examples. These recommendations relate namely to only three central public administration bodies:

- ✚ Central public administration body of Bratislava – Nové Mesto;
- ✚ Central public administration body of Malacky;
- ✚ Central public administration body of Senec.

*Homepages with no skip navigation mechanism applied* – for this group we can recommend to add skip navigation links, then to add target elements, to add the attribute *tabindex="-1"* to website's target elements and to avoid applying CSS code *"display: none;"* in accordance with the exactly in our study presented model examples. These recommendations relate namely to four central public administration bodies, which is exactly one half of the central public administration bodies in the Bratislava Region:

- ✚ Central public administration body of Bratislava – Staré Mesto;
- ✚ Central public administration body of Bratislava – Karlova Ves;
- ✚ Central public administration body of Bratislava – Petržalka;
- ✚ Central public administration body of Pezinok.

Finally, as for verifying the set main hypothesis of the study we can conclude that the hypothesis is not valid, so we have to reject it, because from the 8 analysed homepages of the central public administration bodies in the Bratislava Region only 1 homepage was technically correctly working and was in compliance with legislation in force<sup>16</sup> (state valid as of September 1<sup>st</sup>, 2017).

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<sup>16</sup> See *Výnos Ministerstva financií Slovenskej republiky č. 55/2014 Z.z. o štandardoch pre informačné systémy verejnej správy zo 4. marca 2014* [Ministerial Decree of the Ministry of Finance of the Slovak Republic No. 55/2014 Coll. of Standards for Information Systems of Public Administration issued on March 4<sup>th</sup>, 2014].

According to the results of analysing the differences in applying the skip navigation links on the websites of the central public administration bodies in the Bratislava Region between the years 2014 and 2017 we can underline the following final conclusions, divided in to two separate groups:<sup>17</sup>

*Homepages with improved accessibility* – which relates namely to these central public administration bodies:

✚ Central public administration body of Senec.

*Homepages with worsen accessibility* – which relates namely to following central public administration bodies:

✚ Central public administration body of Bratislava – Karlova Ves.

The final key finding that highlights the necessity of applying the skip navigation mechanism presents the number of links before the main content, which has significantly increased between the years 2014 and 2017.

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<sup>17</sup> See KOPRLOVÁ, J. Applying the Skip Navigation Links in the Context of the Websites' Accessibility of Central State Administration Bodies in the Slovak Republic. *Societas et iurisprudentia* [online]. 2014, roč. 2, č. 2, pp. 133-178 [cit. 2017-09-01]. ISSN 1339-5467. Available at: <http://sei.iuridica.truni.sk/archive/2014/02/SOCIETAS-ET-IURISPRUDENTIA-2014-02.pdf>.

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