

PhET Notes

Mar 11, 2016 - JAWS and NVDA testing

Primary Issues:

- Descriptions are not properly read back with JAWS if description container is set to "polite". Test effects of setting the container to "assertive".
- IE 11 is not working (no way to submit values in number field). Will need to do some validation too.

Changes:

- Put `phet-description` span within a container and set this outer container to `role="status" aria-live="polite"`
- Added `aria-controls="phet-description"` to input controls.
- Added `role="slider"` to input
- Added old and new description string comparison and only set description when values have changed (fixes an FF issue with NVDA with descriptions always being read out)

test results:

Screen Reader	OS + Browser	Description Updates	Alert Update	Slider Value	Progress Bar	Result
Voice Over	Firefox	✗	✗	✓	✗	<ul style="list-style-type: none"> • numerical value of slider is not read when changed, only when focused • description updates are not read back
	Safari	✓	✓	✓	—	<ul style="list-style-type: none"> • numerical value with value text is read • description updates are read back but interrupts from the slider text from being read. • alert box is not read back when aria-live is set to assertive • progress is not read back, but can be discovered by moving virtual cursor to it.
	Chrome	✓	⚠	✓	—	<ul style="list-style-type: none"> • numerical value with value text is read • description updates are read back only when text value has changed. • a beep is heard, but alert box is not read back • when alert box appears, the description does not get read back • progress is not read back, but can be discovered by moving virtual cursor to it.
NVDA 2015.4	Firefox Win10	✓	✓	✓	✓	<ul style="list-style-type: none"> • only numerical value for sliders being reported. • description changes always being reported with each slider change • when alert box is read back, but description is not.
	IE 11 Win 10	✓	✓	✓	✓	<ul style="list-style-type: none"> • Sliders are replaced with number input fields. • There's no way to submit.
	Edge Win10	✗	✗	⚠	✓	<ul style="list-style-type: none"> • numerical value for slider is read back for hand and foot • description and alert are not read back on changes
	Chrome Win10	✓	✓	✓	✗	<ul style="list-style-type: none"> • When alert occurs Alert is read back only, not the description.
JAWS 17	Firefox Win10	✗	✓	✓	✓	<ul style="list-style-type: none"> • numerical value for slider is read back for hand and foot • alert is read back, but not the description. • descriptions are not read back if aria-live on the description container is polite • descriptions are read back if aria-live on the description container is assertive
	IE 11 Win 10	✓	✓	✓	✓	<ul style="list-style-type: none"> • Progress just announces numbers - without context it just sounds random.
	Edge Win10	✗	✗	✓	✗	

Chrome Win10					<ul style="list-style-type: none"> Atomic description of charge update is read back only. All other changes in description text is ignored. Example: "a small amount of negative charges" would be all that is read back. partial descriptions are read back if aria-live on the description container is polite. full descriptions are read back if aria-live on the description container is assertive.
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Findings:

- Adding role="slider" to the input helps Voiceover + FF, and FF + NVDA
- Without aria-live="polite" on the description container Chrome + NVDA will not read back changes
- Role="status" on the description is needed, otherwise Chrome treats changes to the text as atomic.

Mar 2, 2016 - ARIA Live Region testing

Test: Aria-live regions

Source: <http://terрилthompson.com/tests/aria/live-scores.html>

Results:

OS	Screen Reader + Browser	Test 1 aria-atomic="false"	Test 2 aria-atomic="true"	Test 3 role="presentation"
MacOS	VoiceOver + Safari			
	VoiceOver + Firefox			
	VoiceOver + Chrome			
Win10	NVDA 2016 + FF			
	NVDA 2016+ IE11			
	NVDA 2016 + Edge			
	NVDA 2016 + Chrome			Only reads updated text, not whole string.
	JAWS + FF			
	JAWS + IE11			
	JAWS + Edge			
	JAWS + Chrome			

Test: Aria-live regions with polite and assertive messages

Source: <http://terрилthompson.com/tests/liveregions.html>

Results:

OS	Screen Reader + Browser	Polite	Assertive
MacOS	VoiceOver + Safari		
	VoiceOver + Firefox		
	VoiceOver + Chrome		
	NVDA 2016 + FF	Interrupts like assertive	
	NVDA 2016 + IE11		
	NVDA 2016 + Edge		
	NVDA 2016 + Chrome		
	JAWS 17.0124 + FF		
	JAWS 17.0124 + IE11		
	JAWS 17.0124 + Edge		
JAWS 17.0124 + Chrome			

February 11, 2016 - Meeting

Attendees: Jon, Justin, Vince

General Usability & Descriptions

- Using FF, Win 10, Jaws 16 then 17.
- Was able to use the sim well
- The description was important, key for understanding the numbers
- understood the mechanics of the electrons
 - rubbing foot to accumulate electrons
 - positioning hand
 - electron discharge
- liked that there wasn't much on the page
- a bit unclear which foot is moving
 - foot is introduced as "foot off the rug" and the foot range slider is called "foot position" -> could be confusing to user, not sure which foot is moving.
 - could say right foot is on the floor, and label the moving foot as left
- It wasn't clear what the numbers meant on the sliders but figured it out as he experimented with the slider and examining the description.
 - Went back and forth between the description and the hand/foot to learn what was happening
 - Eventually he figured out what was happening

Sonification

Suggestions for possible sonification

- foot rubbing on the floor, discharge
- not sure what sound would be used for the hand, maybe something in stereo to indicate position relative to the door knob
- all sonification should be meaningful and not take over the space
 - e.g. rubbing foot vs carnival background music
 - would providing a separate volume slider for sound effects be useful?
 - important to hear the screen reader
- Use audio icons - more efficient and effective than listening to JAWS read out everything
- Notify as electrons are added
 - he just went up and checked the value of the electrons.
 - Felt that people using JAWS would do this

Fun

- Did you enjoy it? Was it fun?
 - It wasn't frustrating
 - It was interesting more than fun
 - it was able to explain the learning goals well
 - More interactive sounds would make it more interesting