

## 1. Introduction

- Show Power Point "Framework Control - Inheritance"
- This sample shows how to inherit with a Framework Control from any other controls
- Show final solution
  - Framework Control inherits from TcHmiTextbox
  - Framework Control extends the TcHmiTextbox with a new "onEnterPressed" event

## 2. Create new Framework Control "TcHmiInheritance"

## 3. Inherit from the TcHmiTextbox

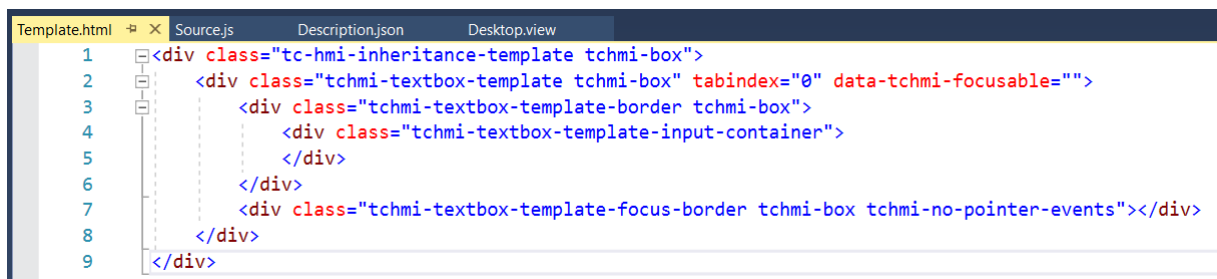
- Change base property in the Description.json

```
16 | | "base": "tchmi-textbox",
```

- Open Source.js, scroll close to the end and change the base control to TcHmiTextbox

```
146 | | | | return TcHmiInheritance;  
147 | | | | })(TcHmi.Controls.Beckhoff.TcHmiTextbox);  
148 | | | | Custom.TcHmiInheritance = TcHmiInheritance;  
149 | | | | })(Custom = Controls.Custom || (Controls.Custom = {}));
```

- The control inherits now from TcHmiTextbox. If a Framework Control inherits from another control and has an own Template.html file, the control must overwrite these file (in this case with the same content of the base control).  
Other possibility: Remove the Template.html from the Framework Control and remove link in Source.js
- Open Framework Infrastructure folder on file system, search for control TcHmiTextbox  
C:\TwinCAT\Functions\TE2000-HMI-Engineering\Infrastructure\TcHmiFramework\Latest\Controls\Beckhoff\TcHmiTextbox
- Open Template.html with Notepad++ and copy the whole content
- Open Template.html of the Framework Control and paste the content:



```
1 | <div class="tc-hmi-inheritance-template tchmi-box">  
2 |   <div class="tchmi-textbox-template tchmi-box" tabindex="0" data-tchmi-focusable="">  
3 |     <div class="tchmi-textbox-template-border tchmi-box">  
4 |       <div class="tchmi-textbox-template-input-container">  
5 |       </div>  
6 |     </div>  
7 |     <div class="tchmi-textbox-template-focus-border tchmi-box tchmi-no-pointer-events"></div>  
8 |   </div>  
9 | </div>
```

- Build control, link project with HMI project, instantiate control
- The control is now like a normal TcHmiTextbox

## 4. Extend the basis control TcHmiTextbox with a new event

- Open Description.json and add the new event:

```

92     "events": [
93     {
94         "name": ".onEnterPressed",
95         "displayName": ".onEnterPressed",
96         "visible": true,
97         "displayPriority": 30,
98         "category": "Control",
99         "description": "This event is fired if the enter key was pressed.",
100        "heritable": true
101    }
102    ],

```

2. Open Source.js, scroll to \_\_prevInit and grab the input container from the Template.html

```

67     TcHmiInheritance.prototype.__prevInit = function () {
68         /** Handle template elements. Should be done before call to __prevInit of super class. */
69         this.__elementTemplateRoot = this.__element.find('.tc-hmi-inheritance-template');
70         this.__elementInputContainer = this.__elementTemplateRoot.find('.tchmi-textbox-template-input-container');
71
72         /** Call __prevInit of super class with the correct instance. */
73         _super.prototype.__prevInit.call(this);
74     };

```

c. Attach: Add event listener for key down

```

97         // reference to this for other scopes
98         var $this = this;
99
100        // add event listener for keydown
101        this.__elementInputContainer.on('keydown', function (e) {
102            $this.__keyDownHandler(e, $this);
103        });

```

d. Detach: Remove event listener

```

// remove event listener for keydown
this.__elementInputContainer.off('keydown');

```

e. Program key down handler:

```

136     // internal function for keydown event handler
137     TcHmiInheritance.prototype.__keyDownHandler = function (e, $this) {
138
139         // check if the pressed key was the enter key
140         if (e.which === 13) {
141             // raise the event
142             TcHmi.EventProvider.raise($this.getId() + '.onEnterPressed');
143         }
144     };

```

5. Build project, reload Desktop.view

- Configure Alert("Test") on the "onPressed" event of the Framework Control
- Open LiveView and show functionality