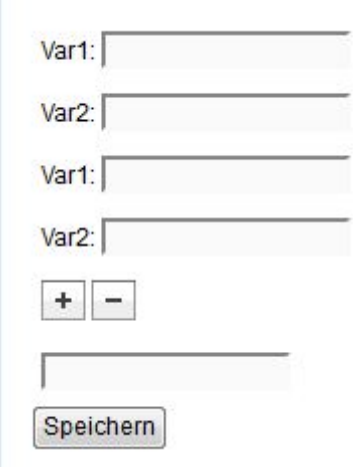
Extended DomRepeater

Um in Smart und Webformen HTML Elemente dynamisch wiederholen oder entfernen zu können benötigt man den sogenannten DomRepeater. Dieser ist allerdings manchmal nicht ausreichend, da z.B. unter anderem nur das letzte duplizierte Element wieder gelöscht werden kann. Falls man aus diesem oder ähnlichen Gründen ein feineres Werkzeug braucht, bietet sich der Extended DomRepeater an:
Dieser besteht aus einer JavaScript Datei und ist für Smart und Webformen geeignet.

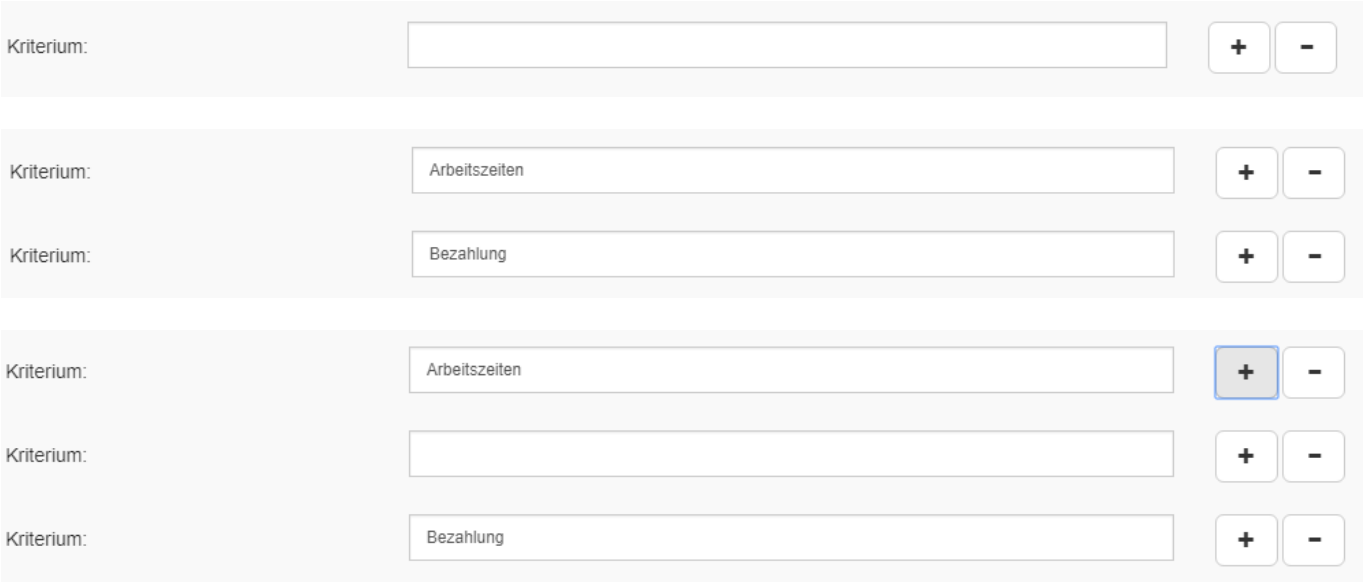
> Achtung: jQuery wird dringend benötigt!!

Sourcen

TODO



Beispiel Form



Beispiel HTML

```
<div class="repeat row" data-repeat="kriterium">
    <div class="col-md-2 form-group">
   <label for="kriterium">
            Kriterium:
        </label>
    </div>
    <div class="col-md-4 form-group">
        <input id="kriterium" name="kriterium" class="form-control"/>
    </div>
    <div class="col-md-1 form-group">
        <button type="button" value="Einfügen" id="repeatKriterium"
name="repeatKriterium" data-callback="gadget.functions.addCallbackkriterium"
start="1" class="kriterium_add btn btn-default btn-lg">
            <span class="glyphicon glyphicon-plus" aria-
hidden="true"></span>
        </button>
        <button type="button" value="Entfernen"
name="repeatKriteriumRemover" id="repeatKriteriumRemover" data-
callback="gadget.functions.removeCallbackkriterium" class="kriterium_rem btn
btn-default btn-lg">
            <span class="glyphicon glyphicon-minus" aria-
hidden="true"></span>
        </button>
    </div>
</div>
```

Dabei zu beachten sind folgende Punkte:

- Das zu wiederholende Element benötigt die Klasse „repeat“
- Das zu wiederholende Element benötigt das Attribut „data-repeat“. Der zugewiesene Wert muss einzigartig gewählt werden.
- Der „Einfügen“-Button muss eine Callback-Methode enthalten die nach folgendem Muster benannt wird: „gadget.functions.addCallbackERSETZMICH1“ wobei ERSETZMICH1 dem Wert des „data-repeat“-Attribut des zu wiederholenden Elementes entspricht
- Der „Einfügen“-Button muss eine Klasse haben die sich nach dem folgenden Muster bennannt wird: „ERSETZMICH1_add“ wobei ERSETZMICH1 dem Wert des „data-repeat“-Attribut des zu wiederholenden Elementes entsprich
- Der „Entfernen“-Button muss eine Callback-Methode enthalten die nach folgendem Muster benannt wird: „gadget.functions.removeCallbackERSETZMICH1“ wobei ERSETZMICH1 dem Wert des „data-repeat“-Attribut des zu wiederholenden Elementes entspricht
- Der „Entfernen“-Button muss eine Klasse haben die sich nach dem folgenden Muster bennannt wird: „ERSETZMICH1_rem“ wobei ERSETZMICH1 dem Wert des „data-repeat“-Attribut des zu wiederholenden Elementes entspricht
- Wenn eine Option in einem SELECT das Attribut default=„default“ hat, wird dieses vorausgewählt sofern kein Wert für dieses Dropdown hinterlegt ist. Dies ist auch wichtig für Pflichtfelder beim Instanzsstart!

Dem „Einfügen“-Button kann das Attribut „start“ mitgegeben werden, welches dafür sorgt das das zu wiederholenden Element von Anfang an n-mal wiederholt wird.

Beispiel Custom

```
var head = document.getElementsByTagName("head")[0];
var customUrl = "/loom-portal/custom/BELIEBIGERORDNER/";
scriptTag = document.createElement('script');
scriptTag.setAttribute("type", "text/javascript");
scriptTag.setAttribute("src", customUrl + "ExtendedDomRepeater.js");
head.appendChild(scriptTag);

gadget.functions.initFunction=function(){
    DOMRepeater(this.form, this.entity, callbackfunction);
}
```

Dabei zu beachten sind Folgende Punkte:

- Erster Übergabeparameter ist das Form
- Zweiter Übergabeparameter das Entity
- Dritter Übergabeparameter ist Optional und eine Callback welche nach initialisierung der DomRepeater Rows durchlaufen werden kann

DomRepeater Code

domRepeater.js

```
/**
 * @author fta on 03.03.16.
 */

(function() {
    "use strict";

    // jQuery
    var $ = jQuery;

    // Tim entity
    var ENTITY = null;

    // Repeater count template
    var COUNT = '<input type="hidden" name="ID" value="1">';

    /**
     * Creates a Object that stores a clean template of the repeatable node
     * Parses that node, applies add/rem functionality and attaches it to
the DOM
     * Stores references to its parent/child Repeater objects
     *
     * @param $html {Node}
     * @param parent {Repeater}
     * @param idx {Number}
```

```
     * @constructor
     */
    function Repeater($html, parent, idx) {

        // Get the repeater id
        // Clone the target html twice
        // $html gets attached to the DOM
        // Clone gets passed on to the next sibling
        // and store references to the parent Repeater
        // and all child Repeater objects
        this.id       = $html.data('repeat');
        this.$html    = $html.clone(true, true);
        this.clone    = $html.clone(true, true);

        this.parent   = parent;
        this.children = [];

        this.init(idx);

    }

    /**
     * Adds add/rem functionality to the $html
     * and puts this Repeater into the children array of the parent
     * Looks for nested repeaters in $html
     *
     * @param idx {Number}
     */
    Repeater.prototype.init = function(idx) {

        // Put this Repeater in its parent.children array
        this.parent.children.splice(idx, 0, this);

        // Run all init functions
        this.initSubRepeatables();
        this.initCountField();
        this.initClicks();
        this.initInputs();

    };

    /**
     * Finds all nested repeatables on the same level
     * Deep search is done by recursion
     */
    Repeater.prototype.initSubRepeatables = function() {

        // Searches for repeatables (on the same level) in a given context
        $('.repeat:not(* .repeat .repeat)', this.$html).each(function(i, el)
{
```

```
            // Replace the original node with the cloned and parsed
Repeater.$html
            el.parentNode.replaceChild(new Repeater($(el), this,
0).$html.get(0), el);

        }.bind(this));

    };

    /**
     * Creates a hidden input field representing the count
     * of this Repeater branch. If a Model is provided it
     * will be updated
     */
    Repeater.prototype.initCountField = function() {

        var self = this;

        // Do this only once
        if (!this.parent.$count) {

            // Create a hidden field and store it on the parent Repeater
            // This field will hold the current Repeater count
            this.parent.$count = $(COUNT.replace('ID',
this.id)).on('count.rep', function() {

                // Update count on the view
                this.value = self.parent.children.length;

                if (ENTITY) {

                    // Update count on the model
                    ENTITY.setValue(this.name, this.value);

                }

            });

            // Attach the hidden field to the parent node
            // so it wont be removed when this Repeater instance is removed
            $(this.$html.context).parent().append(this.parent.$count);

        }

        // Trigger a model update
        this.parent.$count.trigger('count.rep');

    };

    /**
     * Searches for add/rem buttons and binds onclick function to them
```

```
     */
    Repeater.prototype.initClicks = function() {

        var self = this;

        // Search for the add button and attach its click function
        var cleanId = this.id.replace("[","[").replace("]","]");
        this.$html.on('click', '.' + cleanId + '_add', function() {

            self.add(true);

            // Look for a callback
            var fn = self.addCallback
                || (self.addCallback = eval($(this).data('callback')));

            if (typeof(fn) === 'function') {

                // If provided invoke the callback
                fn.call(self.parent.children[self.index() + 1]);

            }

        });

        // Search for the rem button and attach its click function
        this.$html.on('click', '.' + cleanId + '_rem', function() {

            self.rem();

            // Look for a callback
            var fn = self.remCallback
                || (self.remCallback = eval($(this).data('callback')));

            if (typeof(fn) === 'function') {

                // If provided invoke the callback
                fn.call(self);

            }

        });

    };

    /**
     * Searches for all input fields of this Repeater
     * and binds all necessary events (alter/save/change/remove) to them
     */
    Repeater.prototype.initInputs = function() {

        var self = this;
```

```
        // Find and cache all inputs of this Repeater
        this.$inputs = $(':input[name],span[id],div[id]',
this.$html).not($('.repeat :input', this.$html)).each(function(i, el) {

            // Store the original id/name
            var $el = $(el), id = el.id, name = el.name;

            $(el).on('alter', function() {

                // Get the current suffix
                var suffix = self.idSuffix();

                // Adjust the id/name attributes
                this.id   = id ? id + suffix : null;
                this.name = name ? name + suffix : null;

            }).on('change.rep', function() {

                if (ENTITY) {

                    // Don't use true/false if this is a checkbox, use this
fields value or ''
                    ENTITY.setValue(this.name, $el.is(':checkbox') ?
this.checked ? this.value : '' : this.value);

                }

            }).on('save.rep', function() {

                if (ENTITY) {

                    if ($el.is(':radio')) {

                        if (this.checked) {

                            // Don't persist unchecked radio buttons
                            ENTITY.setValue(this.name, this.value);

                        }

                    }
                    else {

                        // Don't use true/false if this is a checkbox, use
this fields value or ''
                        ENTITY.setValue(this.name, $el.is(':checkbox') ?
this.checked ? this.value : '' : this.value);

                    }

                }
```

```
            }).on('model2view.rep', function() {

                if (ENTITY) {

                    if($el.prop("tagName") == "SPAN")
                        $el.text([ENTITY[this.id] || '']);
                    else if($el.prop("tagName") == "SELECT"){

                        var val = ENTITY[this.name];
                        if(!val){

$el.find("option[default]").attr("selected",true);

                        }else{

                            $el.val([ENTITY[this.name] || '']);

                        }

                    }else if($el.prop("tagName")!= "DIV"){
                        // Puts the model value on the view
                        $el.val([ENTITY[this.name] || '']);
                    }

                }

            }).on('destroy.rep', function() {

                if (ENTITY) {

                    // Clears the model
                    ENTITY.setValue(this.name, '');

                }

            });

        });

    };

    /**
     * Adds a new instances directly after this Repeater
     *
     * @param click {?Boolean} Source of call is a click event
     */
    Repeater.prototype.add = function(click) {

        // Create a new Repeater object and attach the resulting html to the
DOM
        this.$html.after(new Repeater(this.clone, this.parent, this.index()
```

```
+ 1).$html);

        if (click) {

            // Recently added instance index
            var nextIndex = this.index() + 1;

            // Alter and resave all following instances
            this.broadcast(nextIndex, 'alter save', true);

            // Clean the model of the next instance
            this.parent.children[nextIndex].broadcast('this', 'destroy');

            if (ENTITY) {

                // Resize smartform
                gadget.onResize();

            }

        }

    };

    /**
     * Removes this instance from them DOM and Repeater tree
     */
    Repeater.prototype.rem = function() {

        // There has to be at least 1 element
        if (this.parent.children.length> 1) {

            // Last known index
            var idx = this.index();

            // Get the last instance of this branch
            var lastInstance = this.parent.children.slice(-1)[0];

            if (this !== lastInstance) {

                // Broadcast a clear event on the last instance
                lastInstance.broadcast(lastInstance, 'destroy');

            }

            // Splice this Repeater from its parent.children array
            // and detach the html from the DOM
            this.parent.children.splice(idx, 1)[0].$html.remove();

            // Trigger a model update
            this.parent.$count.trigger('count');
```

```
            // Removes this branch from the model
            this.broadcast('this', 'destroy');

            // Broadcast a alter event
            this.broadcast(idx, 'alter save');

        }

    };

    /**
     * Moves down this branch starting at a specified index
     * and triggers a event or calls a function on all instances
     *
     * @param index {Number}
     * @param event {Function|String}
     * @param reverse {?Boolean}
     */
    Repeater.prototype.broadcast = function(index, event, reverse) {

        // Needed to reverse the array out of place
        var siblings = !isNaN(index) ? this.parent.children.slice(index) :
[this];

        (!reverse ? siblings : siblings.reverse()).forEach(function(rep) {

            // Needed to reverse the array out of place
            var children = $.extend([], rep.children);

            // Move deeper into the branch
            (!reverse ? children :
children.reverse()).forEach(function(child) {

                child.broadcast(0, event, reverse);

            });

            if (typeof(event) === 'string') {

                // If event is of type string
                // split it into partials and trigger them
                event.split(' ').forEach(function(e) {

                    rep.$inputs.trigger(e);

                });

            }
            else {

                // Callback
```

```
                event.call(rep);

            }

        });

    };

    /**
     * Moves up the Repeater tree and builds a string representation of
     * Repeater indexes eg. [0][1][2]
     *
     * @returns {String}
     */
    Repeater.prototype.idSuffix = function() {

        // Store index strings
        // and the current Repeater
        var ids = [], curr = this;

        // Keep moving up until there is no parent
        while (curr.parent) {

            // Put the next id at the beginning of the array
            ids.unshift('[' + curr.index() + ']');

            // Get the parent
            curr = curr.parent;

        }

        return ids.join('');
    };

    /**
     * Returns the index of the current Repeater
     * in its parent.children array
     *
     * @returns {Number}
     */
    Repeater.prototype.index = function() {

        // Return the index of the current Repeater
        return this.parent.children.indexOf(this);
    };

    /**
     * Looks for a positive count on the Tim entity
     * and adds that many instances of the current Repeater
     * When everything is added this function looks for child Repeater
     * and recursively initializes them aswell
```

```
     *
     */
    function initialize(rep) {

        if (!rep) {
            return;
        }

        if (ENTITY) {

            // Get the provided count or -1
            var count =
parseInt(ENTITY.getValue(rep.parent.$count.attr('name')) ||
rep.$html.find("." + rep.parent.$count.attr('name')+"_add").attr("start") ||
0) - 1;

            // Add instances according to the count
            for (var i = 0; i <count; i++) {

                rep.add(false);

            }

        }

        // Recursively initialize all siblings/children
        rep.parent.children.forEach(function(child) {

            // Alter all inputs and update the view
            child.$inputs.trigger('alter').trigger('model2view');

            // At this point there is only one child
            initialize(child.children[0]);

        });

    }

    /**
     * Main entry point
     * Call this function to attach
     * domrepeater functionality to your document
     *
     * @param ctx {Document|jQuery}
     * @param entity {?Entity}
     * @constructor
     */
    window.DOMRepeater = function(ctx, entity, callback) {

        ENTITY = entity;
```

```
        // Holds all top level Repeater instances
        var root = window.Repeater = [];

        // Start traversing the context
        // use a plain object as the tree root
        // Lookup only top level repeatables
        $('.repeat:not(* .repeat .repeat)', ctx).each(function(i, el) {

            // Create a new top level parent instance
            // and eplace the original node with the cloned and parsed
Repeater.$html
            el.parentNode.replaceChild(new Repeater($(el), root[root.push({
                children: []
            }) - 1], 0).$html.get(0), el);

        });

        // Loop through all top level objects
        // and recursively initialize them
        root.forEach(function(obj) {

            initialize(obj.children[0]);

        });

        if (ENTITY) {

            // Resize smartform
            gadget.onResize();

        }

        if(typeof callback == "function")
            callback();

    };

})();
```