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New added-value user-centered products and product services



**SERVICE Oriented Intelligent Value Adding nETwork for
Clothing-SMEs embarking in Mass-Customisation**



D3.5.2 Prototype of the MF net Coordinator

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LIST OF TERMS AND ABBREVIATIONS

Abbreviation	Definition
MF	Micro Factory
MFNC	Micro Factory Network Coordinator

1 Introduction

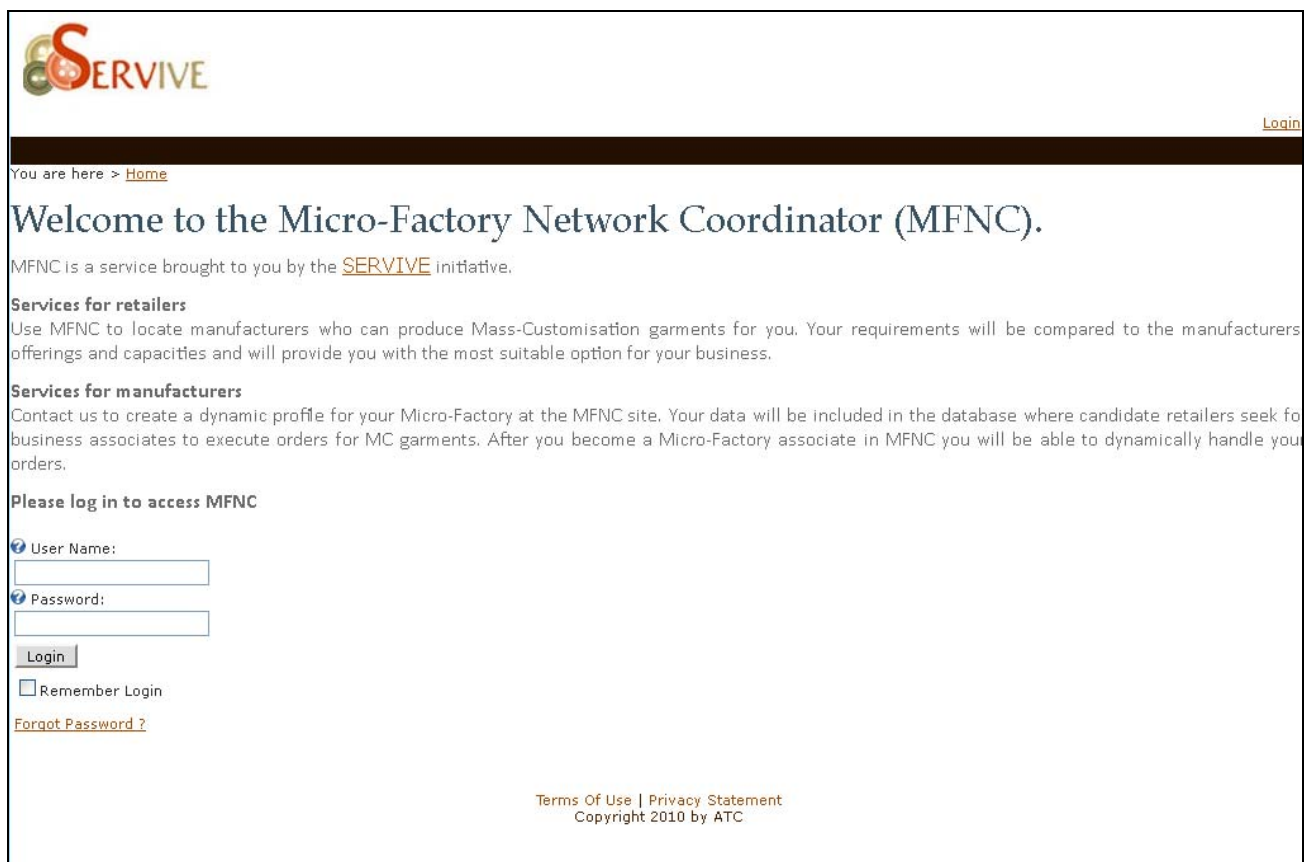
The purpose of this report is to present the Deliverable *D5.3.2 Prototype of the MF net Coordinator* which has been implemented in the framework of *WP3 Decentralised Production Models (Organisation, Networking)*.

This prototype includes two separate developments, first being the implementation of a tool to be used by Retailers/Contractors to locate Micro-Factories that can produce Mass-Customisation garments. The second tool concerns the creation of dynamic profiles for potential Micro-Factories to be linked to a Production Knowledge Base that will match each Micro-Factory's capacities to potential orders by Retailers/contractors.

As stated in Deliverable *D3.5.1 Design of the MF Net Coordinator*, the Micro-Factory Network Coordinator (MFNC) is a tool to coordinate future Micro-Factories. In the aforementioned Deliverable a general description of the overall service is given, along with an overview of functional specifications, while the architecture and typical use cases are documented.

In the present report a presentation of the prototype can be found, in terms of presentation of main interfaces and presentation of key use cases, for each of the tools of the prototype.

The Micro-Factory Network Coordinator can be found at <http://mfnc.servive.eu>.



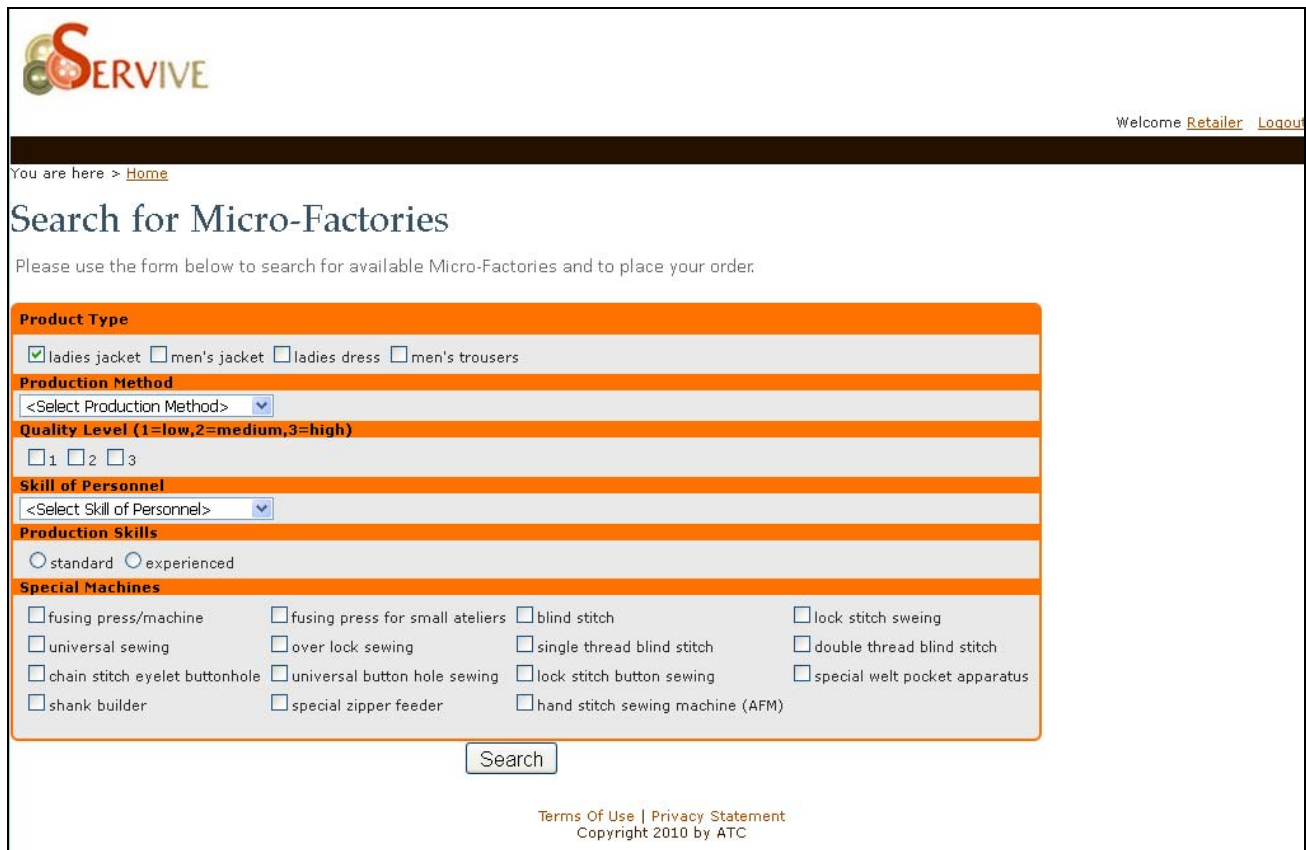
The screenshot shows the login page of the SERVIVE Micro-Factory Network Coordinator (MFNC). At the top left is the SERVIVE logo, and at the top right is a 'Login' link. Below the logo, a breadcrumb trail reads 'You are here > Home'. The main heading is 'Welcome to the Micro-Factory Network Coordinator (MFNC)'. Below this, it states 'MFNC is a service brought to you by the SERVIVE initiative.' There are two sections: 'Services for retailers' and 'Services for manufacturers'. The 'Services for retailers' section describes using MFNC to locate manufacturers. The 'Services for manufacturers' section describes creating a dynamic profile for a Micro-Factory. Below these sections is a login form with the heading 'Please log in to access MFNC'. The form includes fields for 'User Name:' and 'Password:', a 'Login' button, and a 'Remember Login' checkbox. A 'Forgot Password?' link is also present. At the bottom, there are links for 'Terms Of Use | Privacy Statement' and 'Copyright 2010 by ATC'.

Figure 1: SERVIVE Micro-Factory Network Coordinator

2 Micro-Factory Network Coordinator for retailers/contractors

2.1 Searching for Competent MFs (Subcontractors)

A contractor/retailer who seeks to find a MF to produce ladies jackets on demand, logs in the MFNC. There he will be able to provide the search criteria, such as Product Type, Production Method, Quality level, Skill of personnel, Production skills and special machines.



The screenshot shows the SERVIVE web application interface. At the top left is the SERVIVE logo. At the top right, it says 'Welcome Retailer Logout'. Below the navigation bar, it says 'You are here > Home'. The main heading is 'Search for Micro-Factories'. Below the heading, it says 'Please use the form below to search for available Micro-Factories and to place your order.' The search form is divided into several sections:

- Product Type:** Includes checkboxes for 'ladies jacket' (checked), 'men's jacket', 'ladies dress', and 'men's trousers'.
- Production Method:** A dropdown menu with '<Select Production Method>'.
- Quality Level (1=low,2=medium,3=high):** Radio buttons for '1', '2', and '3'.
- Skill of Personnel:** A dropdown menu with '<Select Skill of Personnel>'.
- Production Skills:** Radio buttons for 'standard' and 'experienced'.
- Special Machines:** A grid of checkboxes for various machine types:
 - fusing press/machine
 - fusing press for small ateliers
 - blind stitch
 - lock stitch sweig
 - universal sewing
 - over lock sewing
 - single thread blind stitch
 - double thread blind stitch
 - chain stitch eyelet buttonhole
 - universal button hole sewing
 - lock stitch button sewing
 - special welt pocket apparatus
 - shank builder
 - special zipper feeder
 - hand stitch sewing machine (AFM)

At the bottom of the form is a 'Search' button. Below the form, there are links for 'Terms Of Use | Privacy Statement' and 'Copyright 2010 by ATC'.

Figure 2: Searching for Competent Mfs (Subcontractors) to produce ladies jackets on demand




Initial sorted list of MFs satisfying the search criteria will be provided by the MFNC search/matching engine.

SERVIVE Welcome [Retailer](#) [Logout](#)

You are here > [Micro-Factories](#) > [Search Results](#)

Search Results

This is a list of Micro-Factories that corresponds to your criteria.
Please click on the preferred Micro-Factory to proceed on placing your order.

	MF Name: Micro Factory 3 Product Type: ladies jacket, men's jacket Production Method: Sewn Quality Level (1=low,2=medium,3=high): 3 MaxQuality: 3 Skill of Personnel: universal Production Skills: standard Special Machines: fusing press for small ateliers, shank builder, special zipper feeder, hand stitch sewing machine (AFM)
	MF Name: MF 2 Product Type: ladies jacket, men's jacket Production Method: Sewn Quality Level (1=low,2=medium,3=high): 1, 2 MaxQuality: 2 Skill of Personnel: specialized Production Skills: experienced Special Machines: fusing press/machine, over lock sewing, chain stitch eyelet buttonhole, shank builder
	MF Name: MF 1 Product Type: ladies jacket, ladies dress Production Method: Sewn Quality Level (1=low,2=medium,3=high): 2, 3 MaxQuality: 3 Skill of Personnel: universal Production Skills: standard Special Machines: fusing press/machine, blind stitch, single thread blind stitch, double thread blind stitch, lock stitch button sewing, hand stitch sewing machine (AFM)

[Search Again](#) [Narrow this Search](#)

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Figure 3: Initial sorted list of MFs satisfying the search criteria

Following the acquisition of initial search results the Retailer is able to narrow the search by defining further criteria based on more specific technical specifications of the required item/variant.

SERVIVE Welcome [Retailer](#) [Logout](#)

You are here > [Micro-Factories](#)

Product Type
 ladies jacket men's jacket ladies dress men's trousers

Production Method
 <Select Production Method>

Quality Level (1=low,2=medium,3=high)
 1 2 3

Skill of Personnel
 universal

Production Skills
 standard experienced

Special Machines

<input type="checkbox"/> fusing press/machine	<input type="checkbox"/> fusing press for small ateliers	<input type="checkbox"/> blind stitch	<input type="checkbox"/> lock stitch sweing
<input type="checkbox"/> universal sewing	<input type="checkbox"/> over lock sewing	<input type="checkbox"/> single thread blind stitch	<input type="checkbox"/> double thread blind stitch
<input type="checkbox"/> chain stitch eyelet buttonhole	<input type="checkbox"/> universal button hole sewing	<input type="checkbox"/> lock stitch button sewing	<input type="checkbox"/> special welt pocket apparatus
<input type="checkbox"/> shank builder	<input type="checkbox"/> special zipper feeder	<input type="checkbox"/> hand stitch sewing machine (AFM)	

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Figure 4: Narrowing the search by defining further criteria of Personnel Skills

SERVIVE Welcome [Retailer](#) [Logout](#)

You are here > [Micro-Factories](#) > [Search Results](#)

Search Results

This is a list of Micro-Factories that corresponds to your criteria.
 Please click on the preferred Micro-Factory to proceed on placing your order.

	<p>MF Name: Micro Factory 3 Product Type: ladies jacket, men's jacket Production Method: Sewn Quality Level (1=low,2=medium,3=high): 3 MaxQuality: 3 Skill of Personnel: universal Production Skills: standard Special Machines: fusing press for small ateliers, shank builder, special zipper feeder, hand stitch sewing machine (AFM)</p>
	<p>MF Name: MF 1 Product Type: ladies jacket, ladies dress Production Method: Sewn Quality Level (1=low,2=medium,3=high): 2, 3 MaxQuality: 3 Skill of Personnel: universal Production Skills: standard Special Machines: fusing press/machine, blind stitch, single thread blind stitch, double thread blind stitch, lock stitch button sewing, hand stitch sewing machine (AFM)</p>

[Search Aqain](#) [Narrow this Search](#)

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Figure 5: Final sorted list of MFs satisfying the refined search criteria for ladies jackets

2.2 Negotiating a Contract/Order

Following successful outcome of search for MFs as above, the Contractor wishes to negotiate the initiation of a business partnership and/or the submission of a specific order to one of the shortlisted MFs, in our example with Micro Factory 3.

SERVIVE

Welcome [Retailer](#) [Logg](#)

You are here > [Micro-Factories](#) > [Search Results](#) > [MicroFactory Details](#)

Micro Factory 3

Please review your Micro-Factory selection and include information on Delivery deadline, Quantity and Cost per item in the form below.
The Total cost is calculated automatically. Finally click on "Place Order!" to complete your order.

MF Name: Micro Factory 3
Product Type: ladies jacket, men's jacket
Production Method: Sewn
Quality Level (1=low,2=medium,3=high): 3
MaxQuality: 3
Skill of Personnel: universal
Production Skills: standard
Special Machines: fusing press for small ateliers, shank builder, special zipper feeder; hand stitch sewing machine (AFM)

Order details

Delivery Deadline:

Quantity:

Cost Per Item:

Total Cost:

[Place Order!](#)


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Figure 6: Selection of the appropriate MF

In the screen which presents the MF details, the contractor/retailer is able to submit a Contract Negotiation Form where he/she will enter the following additional information (key data from the original Tender Form (see use Case 1 at *Del3.5.1 Design of the MF Net Coordinator*):

- ⇒ Required delivery time
- ⇒ Total number of items (Quantity)
- ⇒ Cost per item

The total cost is calculated automatically.


Welcome [Retailer](#) [Logout](#)

You are here > [Micro-Factories](#) > [Search Results](#) > [MicroFactory_Details](#)

Micro Factory 3

Please review your Micro-Factory selection and include information on Delivery deadline, Quantity and Cost per item in the form below. The Total cost is calculated automatically. Finally click on "Place Order!" to complete your order.

MF Name: Micro Factory 3
Product Type: ladies jacket, men's jacket
Production Method: Sewn
Quality Level (1=low,2=medium,3=high): 3
MaxQuality: 3
Skill of Personnel: universal
Production Skills: standard
Special Machines: fusing press for small ateliers, shank builder, special zipper feeder, hand stitch sewing machine (AFM)



Order details

Delivery Deadline:	<input type="text" value="31-05-2011"/>
Quantity:	<input type="text" value="15"/>
Cost Per Item:	<input type="text" value="200"/>
Total Cost:	<input type="text" value="3000"/>

[Place Order!](#)

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Figure 7: Entering additional information for an order

Following these actions, the contractor/retailer can place the order, to initiate the negotiations with the selected MF.

SERVIVE

Welcome [Retailer](#) [Logout](#)

You are here > [Micro-Factories](#) > [Search Results](#) > [MicroFactory Details](#)

Micro Factory 3

Please review your Micro-Factory selection and include information on Delivery deadline, Quantity and Cost per item in the form below. The Total cost is calculated automatically. Finally click on "Place Order!" to complete your order.

MF Name: Micro Factory 3
Product Type: ladies jacket, men's jacket
Production Method: Sewn
Quality Level (1=low,2=medium,3=high): 3
MaxQuality: 3
Skill of Personnel: universal
Production Skills: standard
Special Machines: fusing press for small a (AFM)

Order placed!

Your order to Micro Factory 3 has been placed!

Delivery Date universal
Quantity 31-05-2011
Cost per Item 15
Total Cost 3000
Manufacturer 200

You will be contacted shortly from the selected Manufacturer to finalise your submitted order.

Ok

Order details

Delivery Deadline: 31-05-2011
Quantity: 15
Cost Per Item: 200
Total Cost: 3000

[Place Order!](#)

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Figure 8: Order placement – Initiation of negotiations with MF

The procedure is concluded when the MF replies to the contractor/retailer about accepting or rejecting the execution of the placed order, thus accepting the invitation for Contract Negotiations.

3 Micro-Factory Network Coordinator for Micro-Factories

An SME already operating a MC production site (MF - Subcontractor) wishes to join the MFNC service, in order to be included in the list of potential subcontractors.

They will have to register to the service and provide the following details:

- Specify their static profile
- Specify their product range
- Specify their production facilities, according to the standard forms

Then the MFNC administrator includes the MF in the list of potential subcontractors and the MFs appear in the search result lists, when meets the submitted search criteria by the contractor/retailer.

For example, in the prototype of MFNC we have included the following MFs:

MF Name	MF 1
Product Type	Ladies jacket Ladies dress
Production Method	Sewn
Quality Level (1=low,2=medium,3=high)	2, 3
MaxQuality	3
Skill of Personnel	Universal
Production Skills	Standard
Special Machines	Fusing press/machine Blind stitch Single thread blind stitch Double thread blind stitch Lock stitch button sewing Hand stitch sewing machine (AFM)

Table 1: Characteristics of MF1 into MFNC prototype

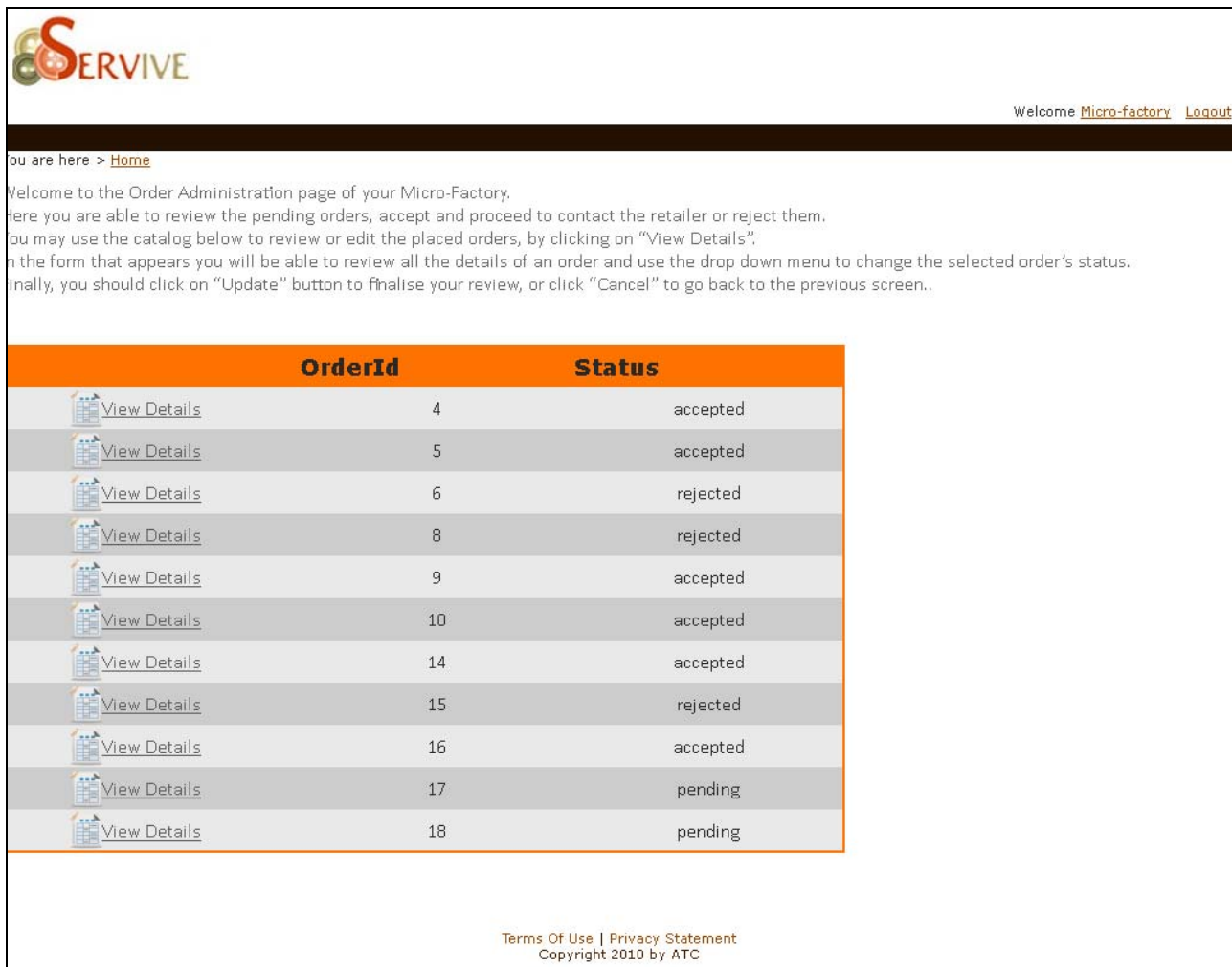
MF Name	MF 2
Product Type	Ladies jacket Men's jacket
Production Method	Sewn
Quality Level (1=low,2=medium,3=high)	1, 2
MaxQuality	2
Skill of Personnel	Specialized
Production Skills	Experienced
Special Machines	Fusing press/machine Over lock sewing Chain stitch eyelet buttonhole Shank builder

Table 2: Characteristics of MF2 into MFNC prototype

MF Name	Micro Factory 3
Product Type	Ladies jacket Men's jacket
Production Method	Sewn
Quality Level (1=low,2=medium,3=high)	3
MaxQuality	3
Skill of Personnel	Universal
Production Skills	Standard
Special Machines	Fusing press for small ateliers Shank builder Special zipper feeder Hand stitch sewing machine (AFM)

Table 3: Characteristics of Micro Factory 3 into MFNC prototype

An MF member of the MFNC logs in the service to respond to invitations for Contract Negotiations.



The screenshot displays the SERVIVE logo at the top left and a navigation bar with "Welcome [Micro-factory](#) [Logout](#)". Below the navigation bar, there is a breadcrumb trail: "You are here > [Home](#)".

The main content area contains a welcome message: "Welcome to the Order Administration page of your Micro-Factory. Here you are able to review the pending orders, accept and proceed to contact the retailer or reject them. You may use the catalog below to review or edit the placed orders, by clicking on 'View Details'. In the form that appears you will be able to review all the details of an order and use the drop down menu to change the selected order's status. Finally, you should click on 'Update' button to finalise your review, or click 'Cancel' to go back to the previous screen.."

	OrderId	Status
View Details	4	accepted
View Details	5	accepted
View Details	6	rejected
View Details	8	rejected
View Details	9	accepted
View Details	10	accepted
View Details	14	accepted
View Details	15	rejected
View Details	16	accepted
View Details	17	pending
View Details	18	pending

At the bottom of the page, there are links for "Terms Of Use | Privacy Statement" and "Copyright 2010 by ATC".

Figure 9: Order Administration page for MFs

Here the MF owner is able to see the list of the placed orders for his MF, to review the pending orders, accept and proceed to contact the retailer or reject them.

By clicking on "View Details" there are able to review or edit the placed orders in the form that appears.

View Details	16	accepted
View Details	17	pending
View Details	18	pending

Order Details

Orderid	17
Status	pending
Contractor	MF 1
Quantity	333
price	23
ProductionMethod	
ProductType	
Quality	
PersonnelSkill	

Special Machines

Fusing press machine	✘
Fusing press for small ateliers	✘
Blind stitch	✘
Lock stitch sweing	✘

Figure 10: Form to edit placed orders

In the form that appears the MF owner is able to review all the details of an order and use the drop down menu to change the selected order's status.

View Details	17	pending
View Details	18	pending

Order Details

Orderid	17
Status	pending
Contractor	MF 1
Quantity	333
price	23
ProductionMethod	
ProductType	
Quality	
PersonnelSkill	

Figure 11: Review and accept or reject an invitation for Contract Negotiations.