

# RecipeNet User Operation Manual

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Semiconductor Coating, Developing & Baking System Recipe Management Software

**Version:** 3.0

**Date:** 2026-02-19

**Author:** CCH

## Version History

Version	Date	Changes
3.0	2026-02-19	Major UI redesign, performance optimizations.
2.2	2026-01-11	Added old recipe xml format compatibility.
2.1	2025-11-06	Added recipe template creation.
2.0	2025-10-15	Initial release with basic recipe management.

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# Table of Contents

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- 1. Introduction
  - 1.1 What is RecipeNet?
  - 1.2 Key Benefits
  - 1.3 Supported Process Types
- 2. Getting Started
  - 2.1 System Requirements
  - 2.2 First Launch
  - 2.3 Interface Overview
- 3. Recipe Management
  - 3.1 Creating New Recipes
  - 3.2 Recipe List Operations
  - 3.3 Recipe Status Management
- 4. Template System
  - 4.1 Understanding Templates
  - 4.2 Template Components
  - 4.3 Creating Custom Templates
- 5. Step Configuration
  - 5.1 Adding Process Steps
  - 5.2 Parameter Types
  - 5.3 Digital Output Configuration
- 6. Loop Controls
  - 6.1 Understanding Loops
  - 6.2 Loop Configuration
  - 6.3 Loop Examples
  - 6.4 Loop Restrictions
- 7. Export & Import
  - 7.1 Exporting Recipes
  - 7.2 Export Formats
  - 7.3 Import Operations
- 8. Settings & Configuration
  - 8.1 System Configuration
  - 8.2 Appearance Settings
  - 8.3 Data Management

- [9. Troubleshooting](#)
  - [9.1 Common Issues](#)
  - [9.2 Regular Maintenance](#)
  - [9.3 Support](#)

# 1. Introduction

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## 1.1 What is RecipeNet?

RecipeNet is professional recipe management software designed by Robotechnik Europe GmbH for semiconductor process equipment. It enables process engineers and operators to create, edit, and manage complex process recipes with precision and efficiency.

## 1.2 Key Benefits

- **Unified Interface:** Consistent experience across mobile, tablet, and desktop
- **Industrial Compliance:** Full compatibility with Robotechnik legacy PLC systems
- **Template-Driven:** Ensure process consistency with customizable templates
- **Real-time Validation:** Prevent errors with live parameter validation
- **Multi-language:** Support for international teams

## 1.3 Supported Process Types

Process	Description
Coater	Photoresist coating processes
Developer	Development and cleaning
HMDS	Adhesion priming
Hotplate	Hard/Soft bake processing
Coolplate	Cooling processing

## 2. Getting Started

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### 2.1 System Requirements

Platform	Minimum Requirements
Android	Android 9.0+, 2GB RAM
iOS	iOS 13.0+, iPhone 8+
Desktop	Windows 10/macOS 11+, 4GB RAM

### 2.2 First Launch

#### 1. Launch Application

- Tap the RecipeNet icon
- Login with valid user account

#### 2. Initial Setup

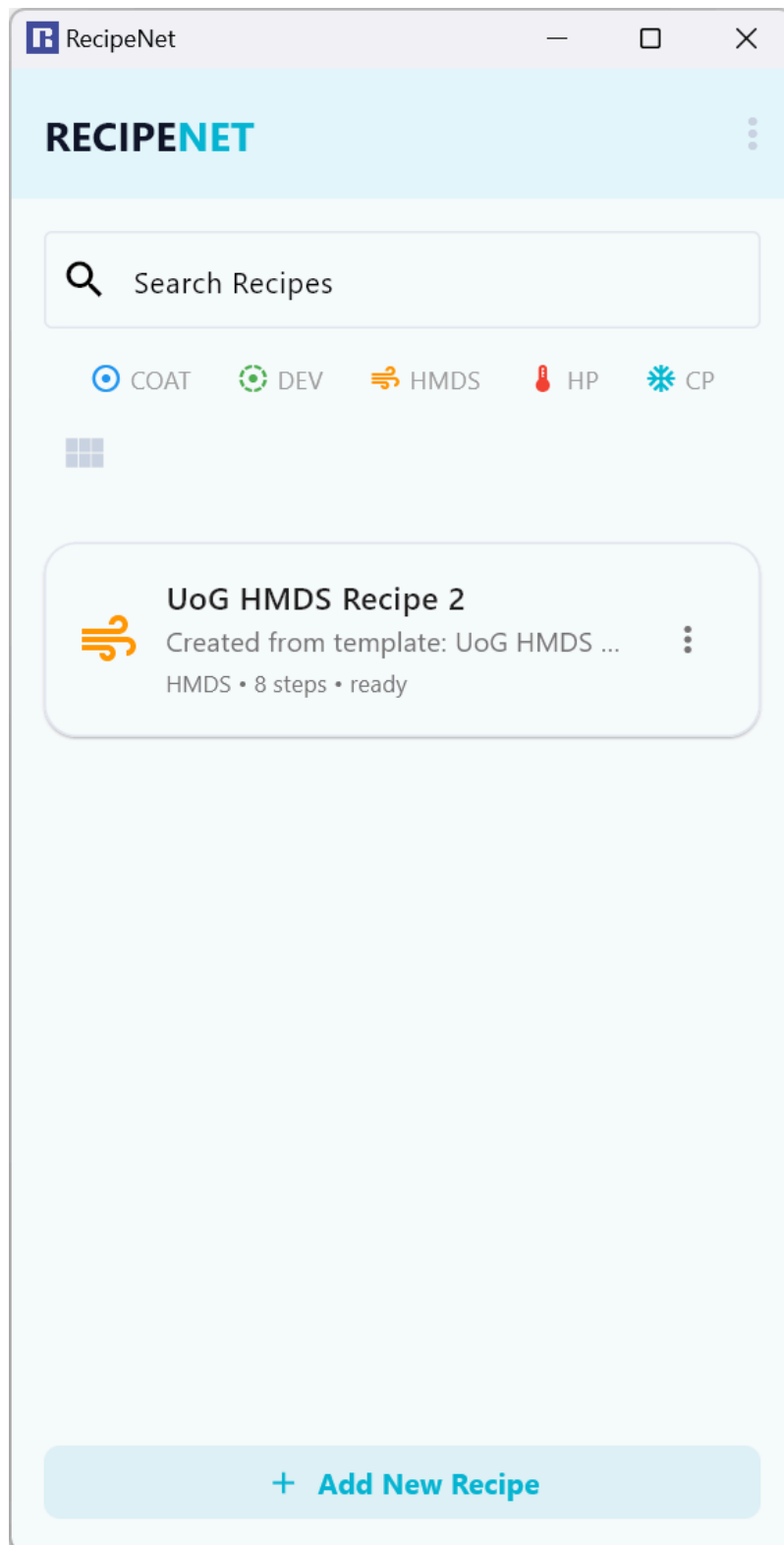
- Select preferred language
- Choose light/dark theme
- Select the correct System.config file. Robotechnik engineers have set it correctly during machine commissioning.

#### 3. Navigation Overview

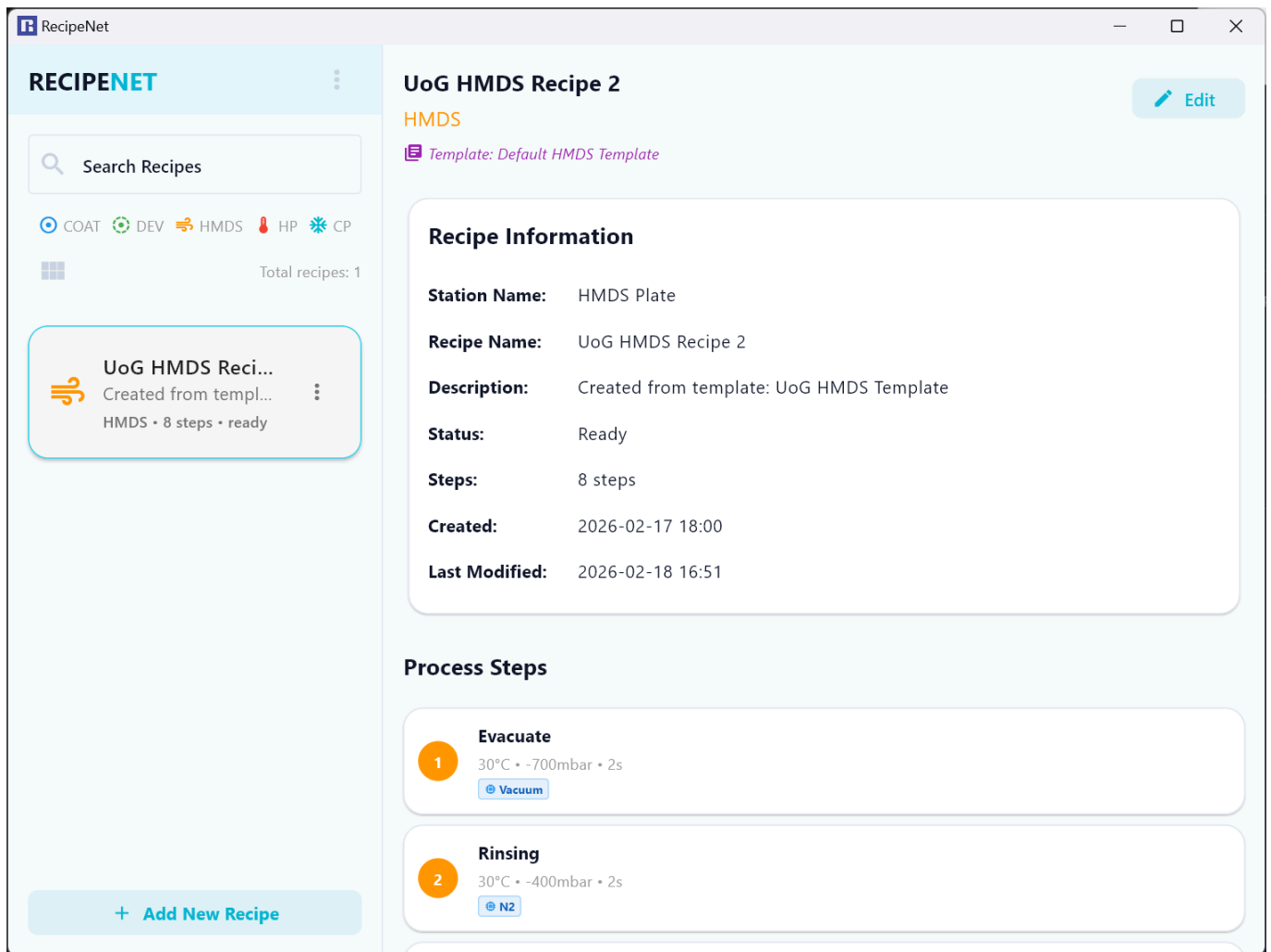
- **Recipe List:** Main screen with all recipes
- **Templates:** Create process templates
- **Settings:** Application configuration
- **About:** Application information

## 2.3 Interface Overview

### Mobile Layout



## Tablet/Desktop Layout



The screenshot displays the RecipeNet software interface. On the left, a sidebar contains the 'RECIPENET' logo, a search bar, and navigation icons for COAT, DEV, HMDS, HP, and CP. Below these is a grid view showing 'Total recipes: 1' and a card for 'UoG HMDS Recipe 2' with details: 'Created from templ...', 'HMDS • 8 steps • ready', and a '+ Add New Recipe' button at the bottom.

The main content area is titled 'UoG HMDS Recipe 2' and includes an 'HMDS' label and a 'Template: Default HMDS Template' note. An 'Edit' button is in the top right. The 'Recipe Information' section lists:

- Station Name:** HMDS Plate
- Recipe Name:** UoG HMDS Recipe 2
- Description:** Created from template: UoG HMDS Template
- Status:** Ready
- Steps:** 8 steps
- Created:** 2026-02-17 18:00
- Last Modified:** 2026-02-18 16:51

The 'Process Steps' section shows two steps:

- 1 Evacuate**  
30°C • -700mbar • 2s  
[Vacuum](#)
- 2 Rinsing**  
30°C • -400mbar • 2s  
[N2](#)

## 3. Recipe Management

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### 3.1 Creating New Recipes

#### 1. Access Recipe Creation

- Tap "Add New Recipe" button
- Select process type from template list
- A new recipe with the default information will be added to the list of recipes.

#### 2. Recipe Information

- Recipe Name: [Unique identifier]
- Description: [Process description]
- Wafer Size: [ 150mm | 200mm | 300mm | 450mm ]
- Status: [ Under Development | Ready ]

#### 3. Template Selection

- Choose from available templates
- Templates define available parameters
- Default templates provided for each process

#### 4. Add Recipe Step

- press the Add Step button to add a new step under the Process Steps
- see [5. Step Configuration](#) for more information

### 3.2 Recipe List Operations

Action	Method	Description
Search	Search bar	Filter recipes by name or description
Group View	Toggle button	Group by process type
Select	Tap recipe overview card	View details or edit
Duplicate	Tap recipe overview overflow menu	Duplicate the selected recipe
Delete	Tap recipe overview overflow menu	Delete the selected recipe

### 3.3 Recipe Status Management

Status	Description
Under Development	Recipe being created/tested
Ready	Approved for production.

** INFO**

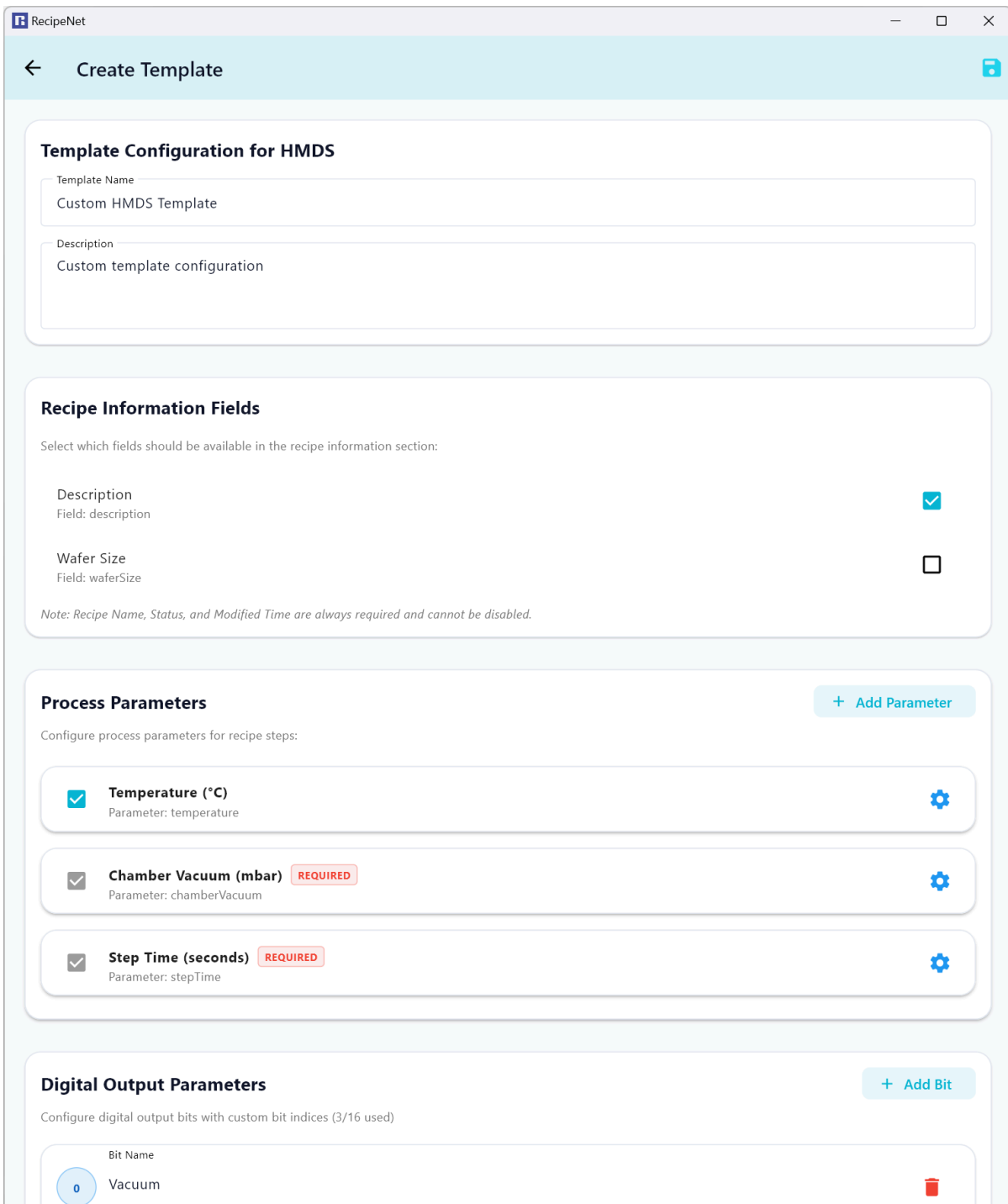
Only recipes with the status "Ready" can be seen and downloaded to the PLC.

# 4. Template System

## 4.1 Understanding Templates

Templates define which parameters and fields are available for recipes. Each process type has default templates that can be customized.

### Template Creation



## Template Process Parameters

RecipeNet
- □ ×

← Create Template
📄

### Process Parameters + Add Parameter

Configure process parameters for recipe steps:

**Temperature (°C)**
⚙️

Parameter: temperature

#### Basic Information

Parameter Type

Analog ▾

PLC Command

TEMP

Command Description

Target Temp

Unit

📏 °C

#### Numeric Values and Constraints

Default Value	Tolerance
<div style="border: 1px solid #ccc; padding: 2px; margin-bottom: 5px;">90.0</div>	<div style="border: 1px solid #ccc; padding: 2px; margin-bottom: 5px;">2.0</div>
Min Value	Max Value
<div style="border: 1px solid #ccc; padding: 2px; margin-bottom: 5px;">0.0</div>	<div style="border: 1px solid #ccc; padding: 2px; margin-bottom: 5px;">150.0</div>

Decimal Places

1 decimal place ▾

Controls precision for all numeric values

#### Configuration Flags

⚙️ General Parameter

End Settable

Enable Time Start

Predefined Values

1 decimal place

+ Add Predefined

Predefined Values Only
🔍

Restrict parameter to only use predefined values

## 4.2 Template Components

Template Structure:

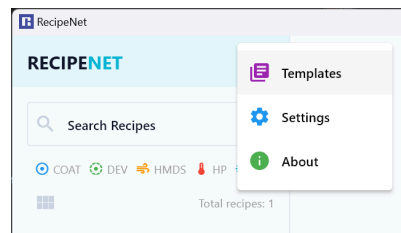
- Basic Information:
  - Process Type
  - Template Name (must be unique)
  - Description
- Recipe Information Fields:
  - Recipe Name (mandatory)
  - Recipe Status (mandatory)
  - Modified Time (mandatory)
  - Description (optional)
  - Wafer Size (optional)
  - You can enable or disable optional fields by clicking the checkbox on the right.
- Process Dependent Parameters:
  - Basic Information
    - Parameter Type (Analog/Digital/Label)
    - PLC Command
    - Command Description
    - Unit
  - Numeric Values and Constraints (Min/Max/Tolerance/Decimals/Default)
  - Configuration Flags
  - Predefined Values

## 4.3 Creating Custom Templates

### 1. Access Template Management

- Tap overflow menu (:) on the Appbar
- Select "Templates"
- Choose process type
- The template creation page will open

### Template Process Parameters



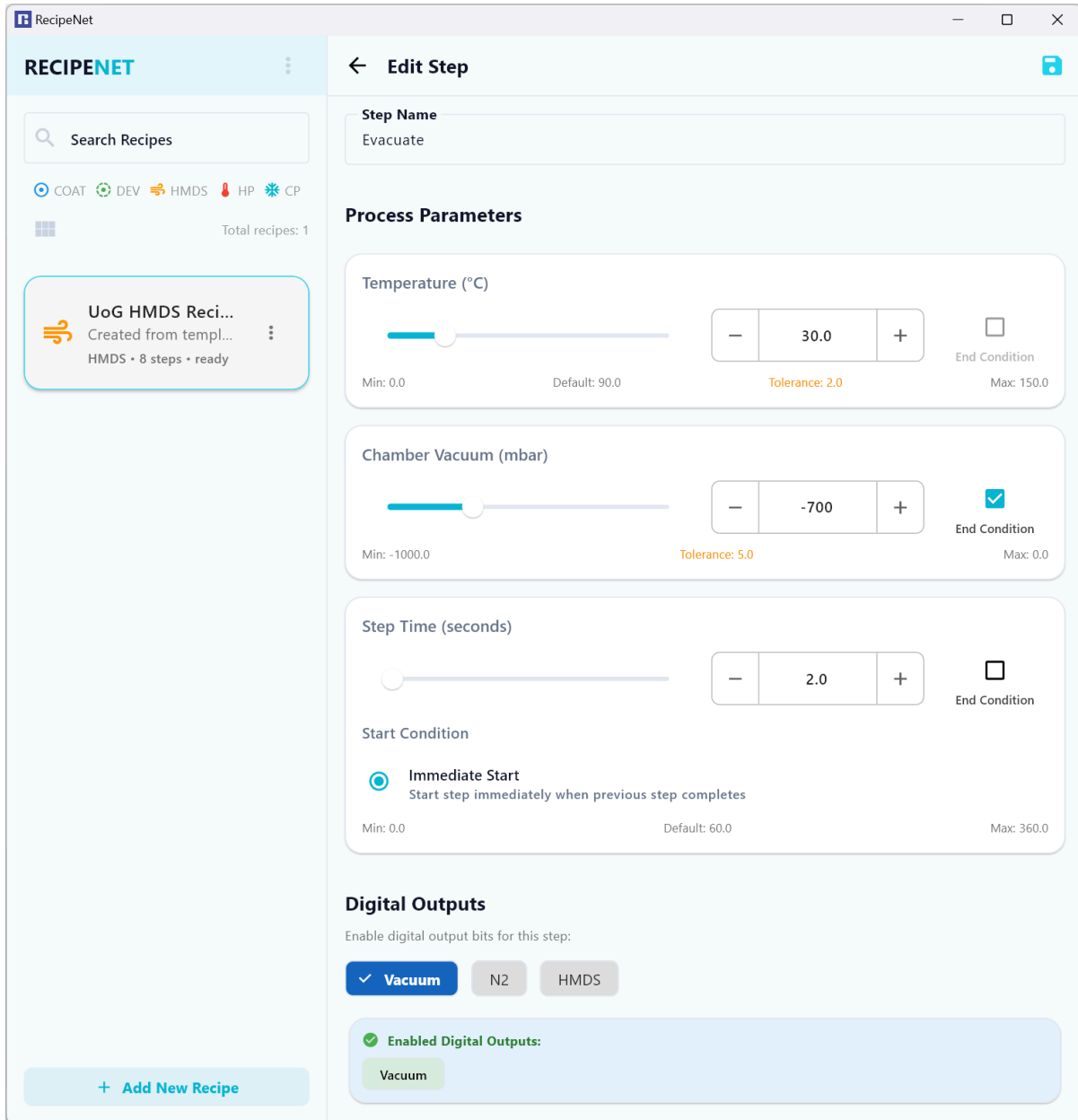
### 2. Configure Template

- Enable/disable recipe information fields
- Enable/disable process parameters
- Set parameter basic information
- Set parameter constraints
- Set configuration flags
- Define predefined values
- Configure digital output bits
- Add new parameters if necessary
- Save template configuration

### 3. Template Validation

- System validates template consistency
- Warnings for missing required fields
- Compatibility checks with existing recipes

# 5. Step Configuration



The screenshot shows the 'Edit Step' configuration window in the RecipeNet application. The window title is 'RecipeNet' and the page title is 'Edit Step'. On the left sidebar, there is a search bar for recipes and a list of recipe categories: COAT, DEV, HMDS, HP, and CP. A specific recipe is highlighted: 'UoG HMDS Reci...' with details 'Created from templ...' and 'HMDS • 8 steps • ready'. At the bottom of the sidebar is a '+ Add New Recipe' button.

The main configuration area is titled 'Edit Step' and contains the following sections:

- Step Name:** A text field containing 'Evacuate'.
- Process Parameters:**
  - Temperature (°C):** A slider and numeric input set to 30.0. Range: Min: 0.0, Default: 90.0, Max: 150.0. Tolerance: 2.0. An 'End Condition' checkbox is present and unchecked.
  - Chamber Vacuum (mbar):** A slider and numeric input set to -700. Range: Min: -1000.0, Max: 0.0. Tolerance: 5.0. An 'End Condition' checkbox is present and checked.
  - Step Time (seconds):** A slider and numeric input set to 2.0. Range: Min: 0.0, Max: 360.0. An 'End Condition' checkbox is present and unchecked.
- Start Condition:** A radio button is selected for 'Immediate Start', with the description 'Start step immediately when previous step completes'.
- Digital Outputs:** A section titled 'Enable digital output bits for this step:' with three buttons: 'Vacuum' (checked), 'N2', and 'HMDS'. Below this, a green box indicates 'Enabled Digital Outputs:' with 'Vacuum' listed.

## 5.1 Adding Process Steps

### 1. Access Step Editor

- Open recipe in edit mode
- Tap "Add Step" button
- Select step type if applicable

### 2. Step Configuration

- Step Name: [Descriptive name]
- Process Parameters: [Template-defined parameters]
- Digital Outputs: [Bit configuration]

### 3. Parameter Settings

- Set values within min/max constraints
- Use predefined values when available
- Configure end conditions
- Set start conditions for StepTime when available

## 5.2 Parameter Types

Type	Description
Analog	Numeric values with constraints
Digital	On/Off states (bit operations)
Label	Text descriptions and metadata
StepTime	Time-based parameters with start conditions

## 5.3 Digital Output Configuration

Digital outputs control physical devices in the semiconductor equipment. Each bit corresponds to a specific function.

### 1. Template-Based Bits

- Bits defined in template configuration
- Consistent naming across recipes
- Template controls available bits

### 2. Bit States

- Enabled: Bit is active (1)
- Disabled: Bit is inactive (0)
- Visual indicators show current state

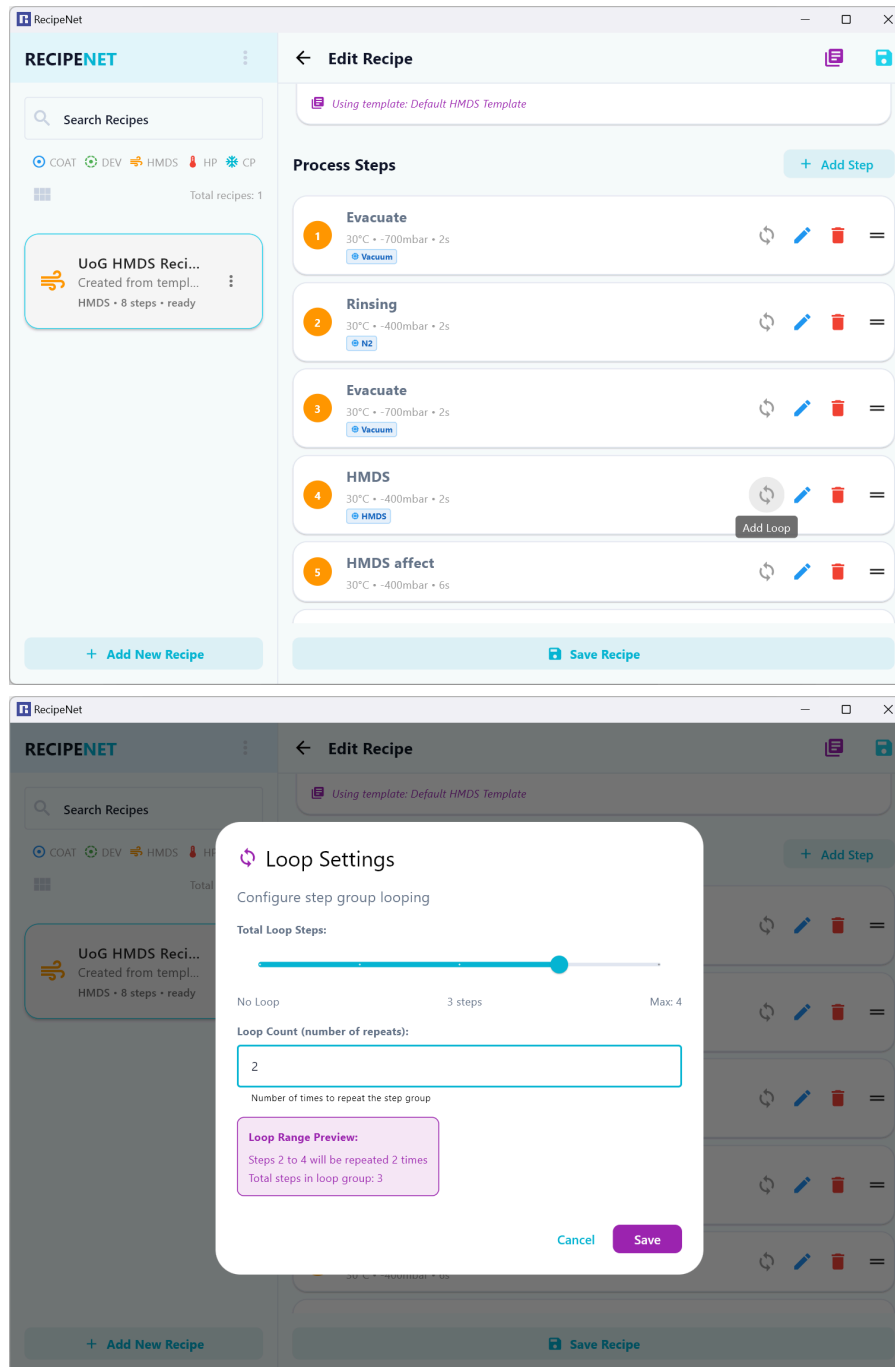
### 3. Bit Operations

- Toggle individual bits
- State persistence across step copies

### 4. Visual feedback for enabled states

- Bit 0: [Enable] [Name: VACUUM]
- Bit 1: [Enable] [Name: N2]
- Bit 2: [Enable] [Name: HMDS]

## 6. Loop Controls




### 6.1 Understanding Loops

Loops allow repeating sequences of steps, essential for multi-pass processes and iterative operations.

### 6.2 Loop Configuration

#### 1. Access Loop Settings

- Tap loop icon (  ) on step card
- Configure in loop edit dialog

## 2. Loop Parameters

- Loop Jump: [Number of steps to include]
- Loop Count: [Number of repetitions]
- Valid Range: [Auto-calculated based on recipe]





## 3. Loop Validation

- System prevents invalid loop configurations
- Visual indicators for steps in loops
- Automatic loop range calculation

## 6.3 Loop Examples

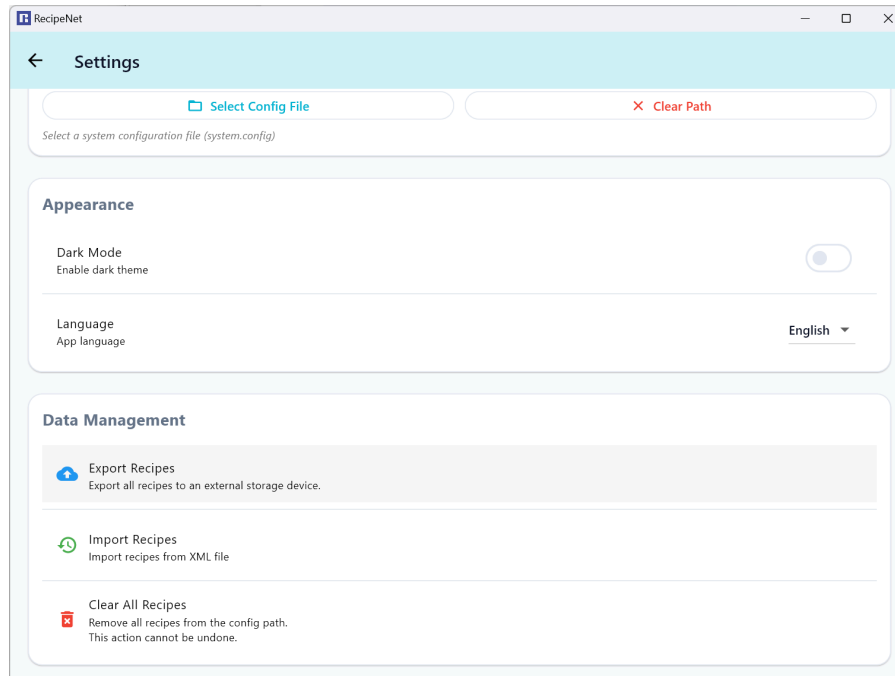
Scenario	Configuration	Result
Steps 2-4 repeat 5 times	Add a loop to Step 4, Jump: 3, Count: 5	Steps 2-4 repeat 5 times
Repeat the current step 3 times	Add a loop to the current step, Jump: 1, Count: 3	Selected step repeats 3 times

## 6.4 Loop Restrictions

-  Cannot create overlapping loops
-  Cannot loop beyond recipe boundaries
-  Maximum loop count: 100
-  Loop ranges will be cleared automatically when steps are reordered

## 7. Export & Import

### 7.1 Exporting Recipes



#### Batch Export

- Access from Settings screen
- Select "Export All Recipes"
- Choose destination folder
- Monitor export progress

### 7.2 Export Formats

#### XML Format (PLC Compatibility)

```

<StationRecipe>
  <General Name="MyRecipe" Station="Coater"/>
  <Step1>
    <param type="analog" param="SPEED" value="3000"/>
    <param type="digital" param="MEDIA" value="3"/>
  </Step1>
</StationRecipe>

```

### 7.3 Import Operations

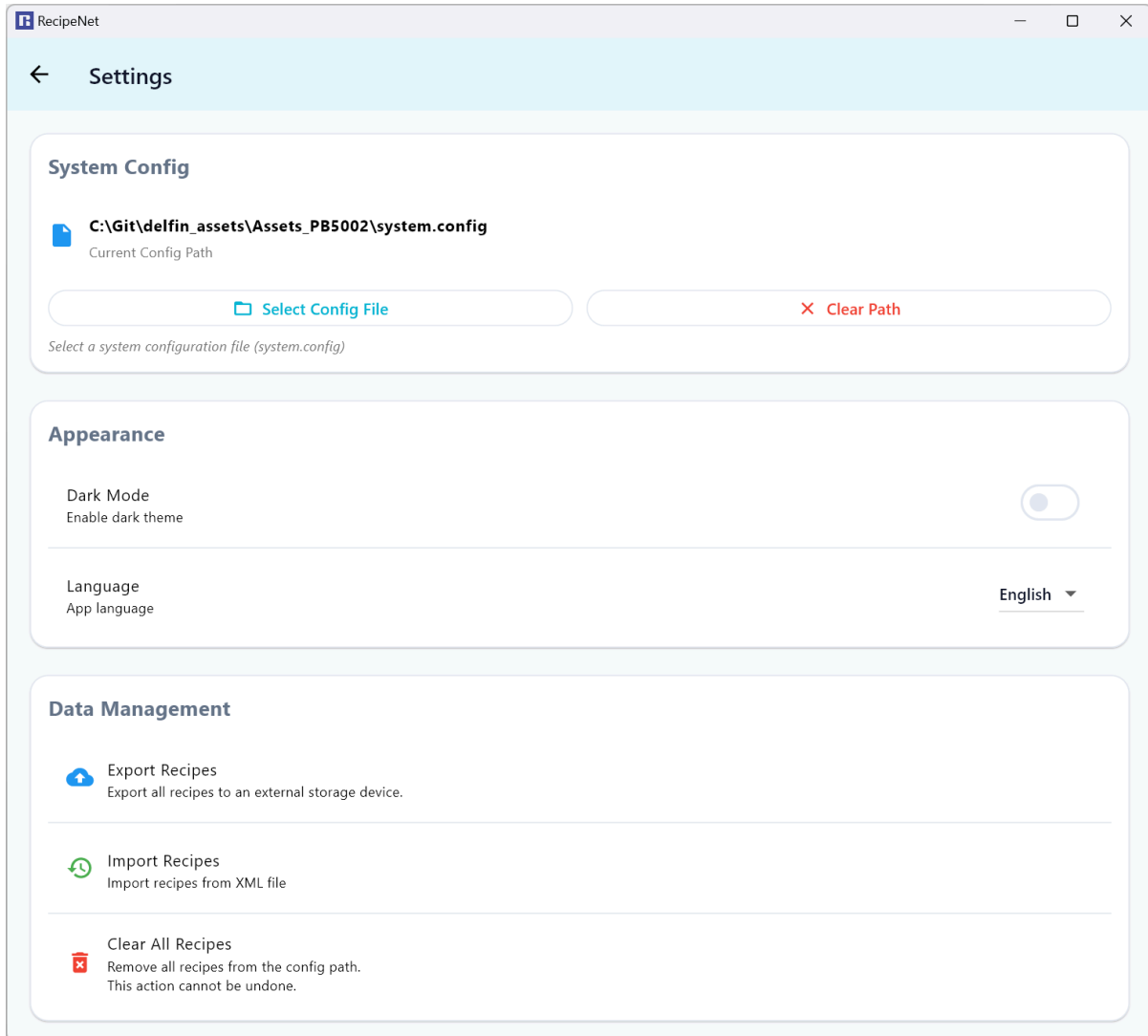
## 1. Recipe Import

- Access from Settings screen
- Select a matching template
- Select import source
- Choose import format, only xml is supported

## 2. Import Validation

- Format compatibility check
- Parameter validation

## 8. Settings & Configuration



## 8.1 System Configuration

### 1. Config File Path Settings

- Select the pre-configured System.config file
- System.config path will be used as:
  - Recipe storage location
  - Template directory
  - Export/import default paths

## 8.2 Appearance Settings

### 1. Theme Configuration

- Light/Dark mode toggle

### 2. Language Settings

- Multi-language support
- Runtime language switching

## 8.3 Data Management

- Export Recipes ([7.1 Exporting Recipes](#))
- Import Recipes ([7.3 Import Operations](#))

## 9. Troubleshooting

### 9.1 Common Issues

Issue	Symptoms	Solution
Recipe won't save	Save button disabled	Check required fields, name uniqueness
Step parameters missing	Empty parameter list	Verify template configuration
Export fails	Error message, no file	Check storage permissions, available space

#### Error Messages

Error Code	Description	Action Required
ERR_NAME_EXISTS	Recipe name already in use	Choose different name
ERR_PARAM_RANGE	Parameter value out of range	Adjust value within constraints
ERR_TEMPLATE_MISSING	Required template not found	Reinstall templates or create new
ERR_STORAGE_FULL	Insufficient storage space	Free up space or change location

### 9.2 Regular Maintenance

Regular backup recipes and templates.

### 9.3 Support

Need Help? Contact [support@robo-technik.eu](mailto:support@robo-technik.eu)