MICT – Pallet Link Merge

**Project Identification**

|  |  |  |
| --- | --- | --- |
| **PR Number:** | **Business Analyst:** | **Date:** |
|  | Rodolfo Cabada | 08/07/2018 |
| **Region:** | **Business Unit:** | **Requestor:** |
| Americas | Engineering Manufacturing | Hector Lopez |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Application Name** | MICT | | | |
| **Functional Owner** | Ivan Flores | | | |
| **IT Owner** | Jaime Anchondo | | | |
| **Supported Business Process** | |  | | |
| **Criticality of supported Business Process** | | Low  No direct impact on production | Medium  Limited impact on production, workaround available as alternative if this process stops | High  Significant impact on production, no workaround available, If this process stops, production stops |
| **Is there an alternative system in other locations?** | | Yes  No | | |
| **Description of alternative:** | | Currently the linked of the PCB’s with the pallet is done through the Pallet Link application, if the implementation fails, this workaround will continue to exist. | | |
| **Reasons why alternative is not acceptable:** | | Performance problems  Complexity  Others: | | |
| **Reason of requirement** | | Legal | Customer | SOX |
| Others: | | |

Change History

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of BA** | **PR/IN number** | **Date** | **Description and Page reference (mark with color and use ‘track changes’** |
| Rodolfo Cabada | NA | 8/07/2018 | Initial requirements |
|  |  |  |  |

Document References

|  |  |
| --- | --- |
| **Document Title** | **Link to document** |
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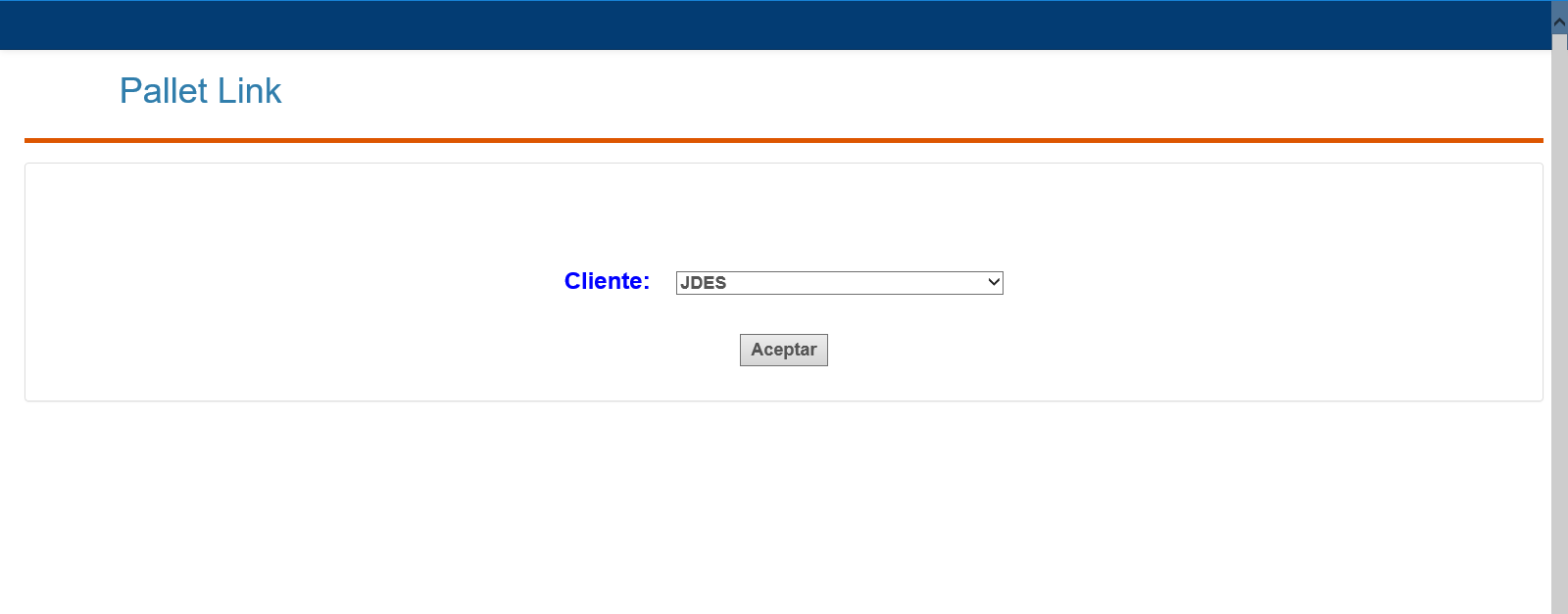
# Business Reason and Purpose of the Application

Manufacturing Engineering department requested a new enhancement for the MICT application due to the implementation of the SFMM v2 in customer TESLA. The current manufacturing process in the stations ERSA / Wave Soldering include the use of an application called “Pallet Link” to do the linking of the PCB’s with the pallets validating certain things before being able to do it, for example: the maintenance of the pallet, cycle times, etc.

The need consists in the merge of this process with the MICT functions (required by the SFMM) to associate the component / GRN traceability with the serial numbers processed in ERSA / Wave Soldering, both operations at the same time (if required). This merge will help to avoid multiples scanning for the same PCB serial number, so with a single scanning the new application will create the Pallet Link record as well as the MICT record. Otherwise, the ERSA operator had to scan the same serial number on each application

The requirement also consists to use the MICT functions without the Pallet Link process or just the Pallet Link process without the MICT functions or both together, this must be possible to configurate.

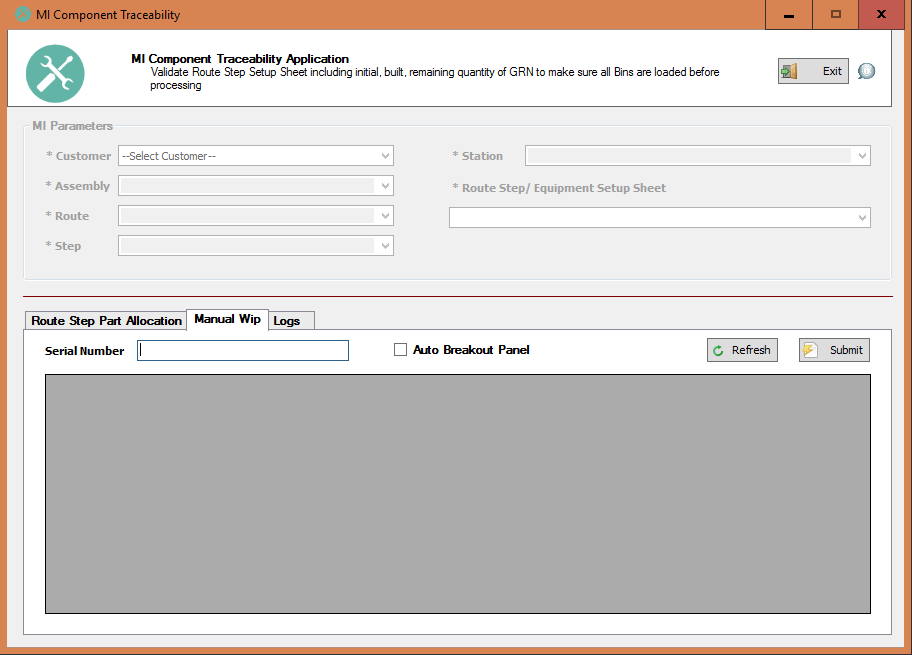
The following screenshots show the current user graphic interface of the Pallet Link application:



One of the validations that are made before the linking are:

* The pallet exists
* The pallet corresponds to the selected client.
* The pallet has the preventive maintenance on time.

Traceability system of manual components established online consists of having capabilities to validate configuration sheet of route steps / equipment configuration sheet, amount of consumption and GRN scanning strength component once the number of components has been exhausted.



This is the currently user graphic interface of the MICT, this screen will be shown when the Pallet Link option is not configured.

# Acronym List

List all the acronyms that are used in this document and not straight forward.

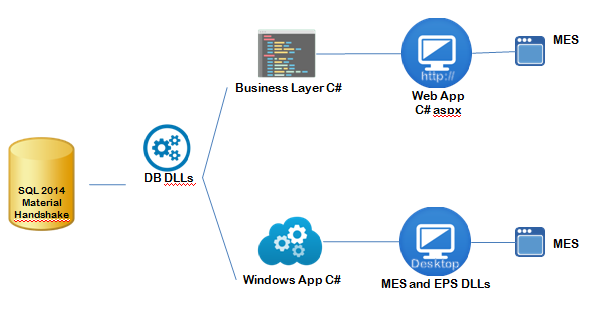
|  |  |
| --- | --- |
| **Acronym** | **Description** |
| MICT | Manual Inline Component Traceability |
| MES | Manufacturing Execution System |
| GRN | Good Receipt Number |
| SFMM | Shop Floor Material Management |
| ERSA | High-end reflow soldering system with thermal performance control and energy balance. |
| PCB | Printed Circuit Board |

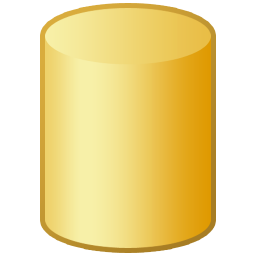
# Solution Overview (High Level)

The solution proposed consists of the following:

1. Implement the Pallet Link option into the User graphic interface of MICT.
2. Implement the Pallet Link functions in a Web API that be possible to consume by the MICT system only when it configured.
3. When the implementation is complete the user will be capable of use one of the following options in the MICT system:
   * If the Pallet Link option is configured then when the user log in into the MICT system an screen with both options will be displayed (MICT and Pallet Link) with the option to use one or two at the same time.
     + If both options (MICT and Pallet Link) are selected then the user first will need to scan the Pallet serial number next scan the PCB serial number into the Manual WIP tab in this case the linking of the PCB scanned will be automatic only after passing the validations of the MICT and the linking will be one by one.
     + If the MICT option is enabled and the Pallet Link option is disabled then the user will use the MICT just like currently just as it has been doing.
     + If the Pallet Link option is enabled and the MICT option is disabled then the user will need to select first the customer, next scan the pallet serial number next scan the PCB serial number in a field that only will be showed in this case, finally select the option ’Link’ and the linking can be several serial numbers at a time.
   * If the Pallet Link option is not configured the system will be shown with the current version without changes.

**System Architecture**

**MICT – Pallet Link Merge**

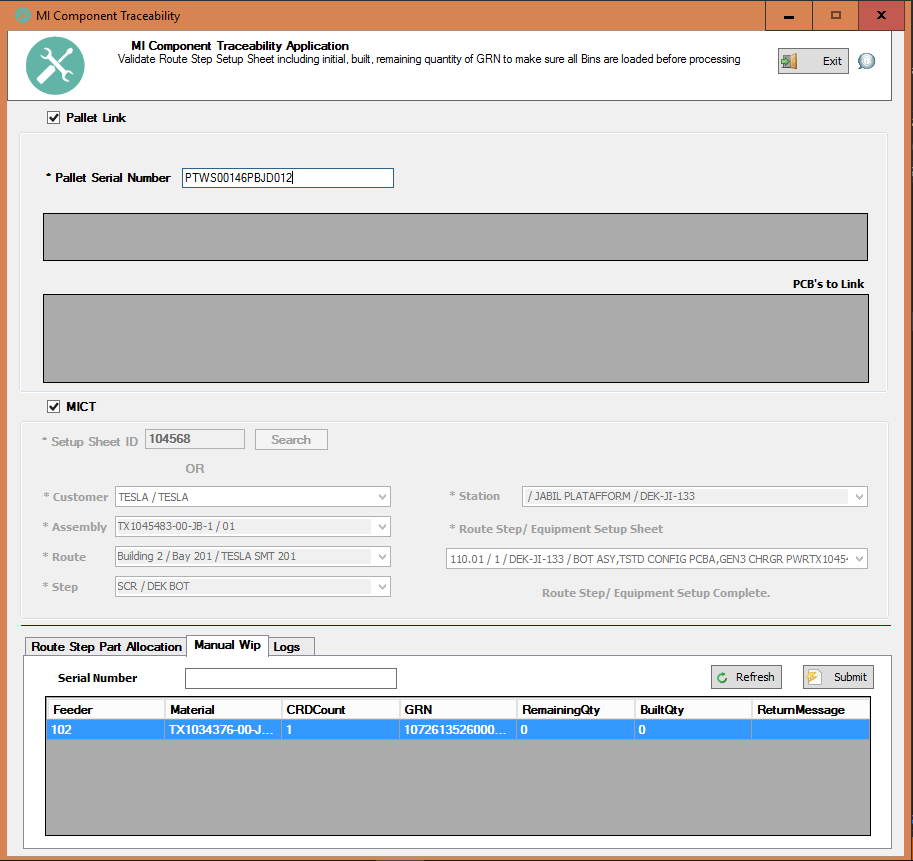


**SQL 2014**

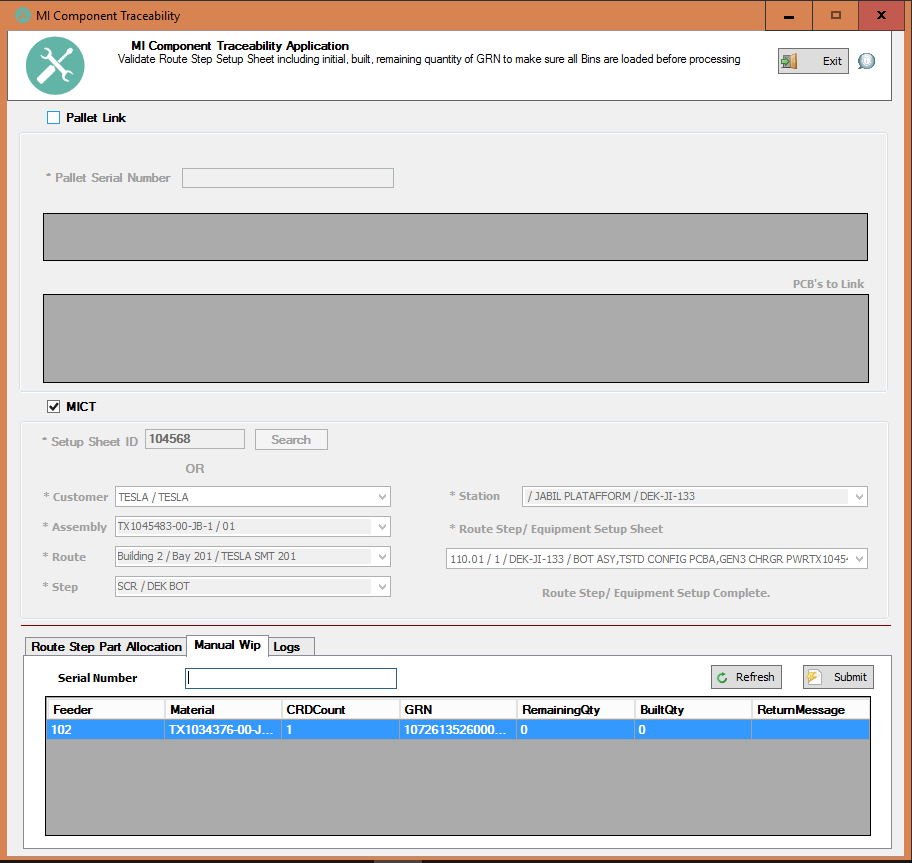
**MEWarehouse**

Due to dependencies of the current MICT and Pallet Links versions with other applications will be use the originals databases by separately.

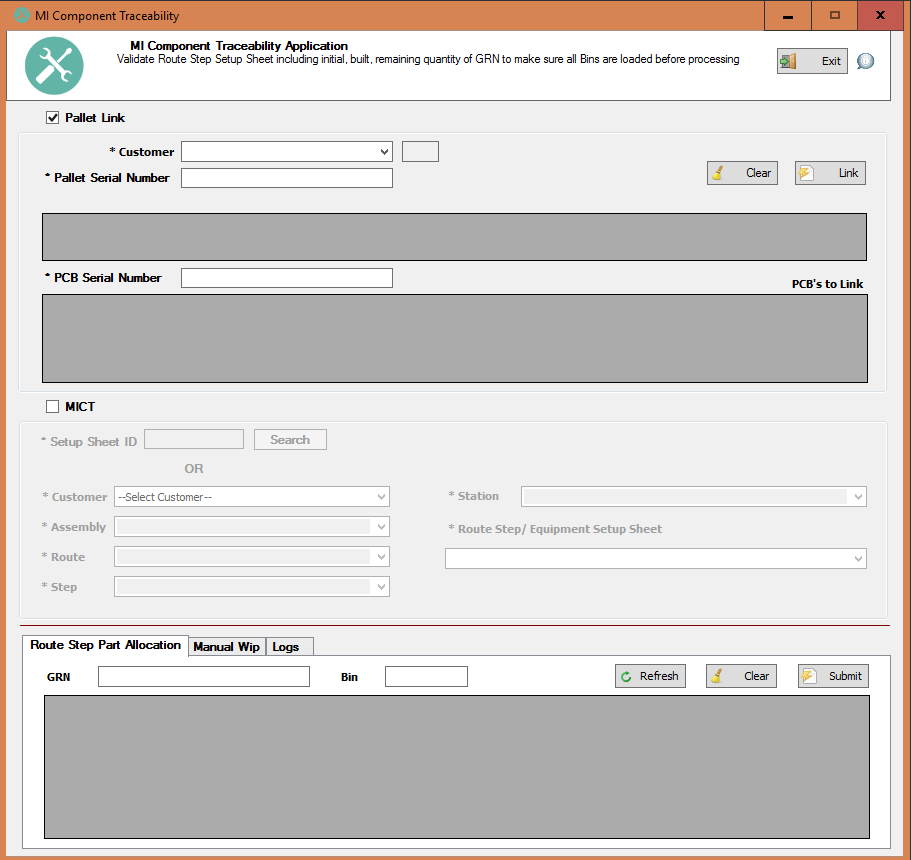
**User graphic interface proposal**



In this image the two options (Pallet Link and MICT) are shown selected.

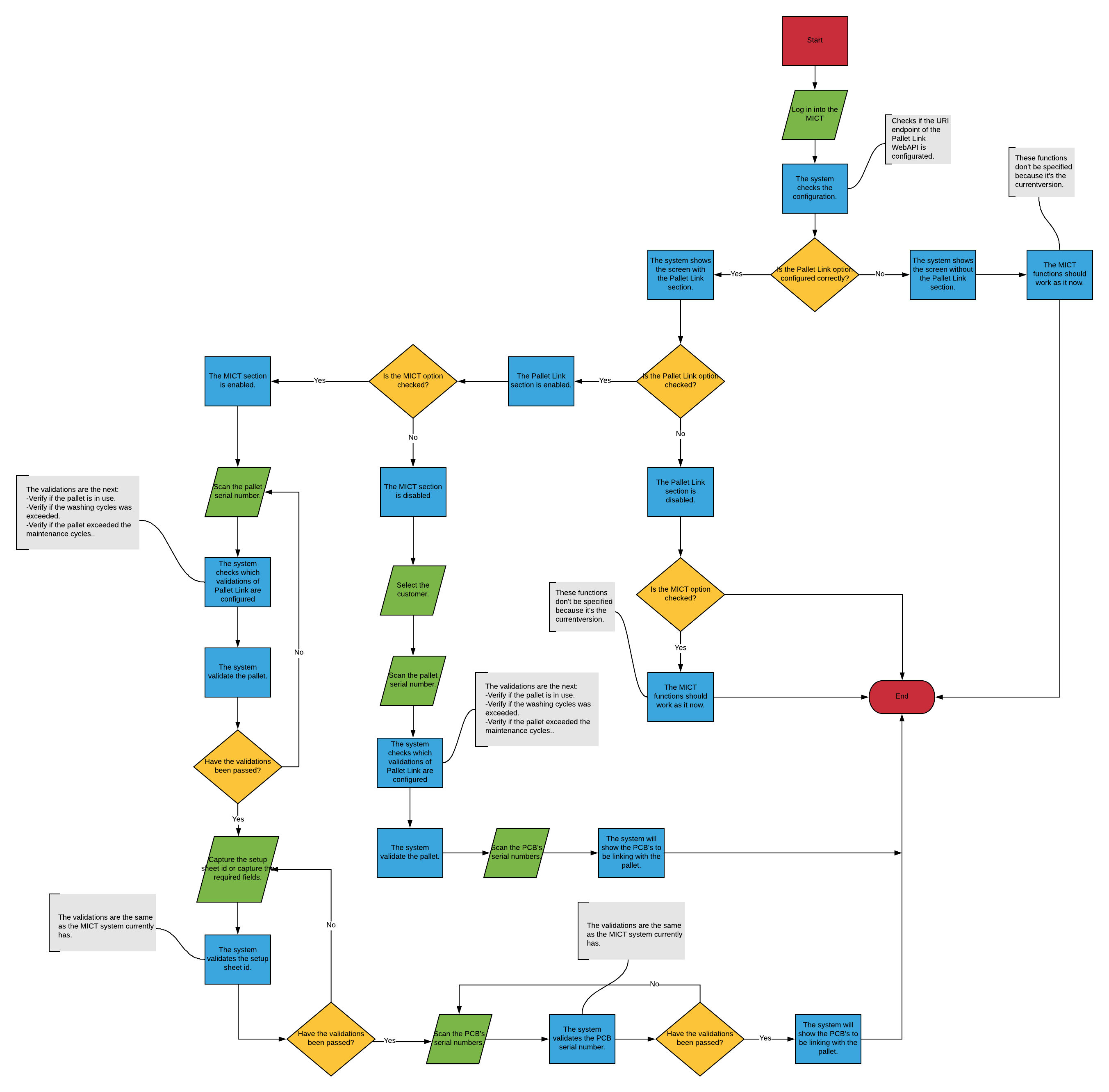


In this image only the MICT option is selected.

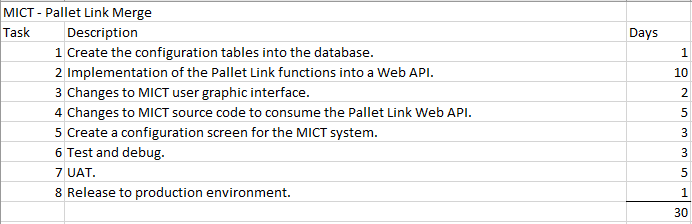


In this image only the Pallet Link option is selected and other fields and buttons are shown.

**Flow chart**



**Project Plan**



## Description of the Process and Summary of Improvements

The following improvements will be made:

1. The merge of the Pallet Link process with the MICT functions will save time because in a single process, what was previously done in two processes with two separate applications will be carried out.

## Output list

|  |  |  |  |
| --- | --- | --- | --- |
| **Field name on the output list** | **Source ID referring to item listed in the detailed execution logic** | **Length of the output file** | **Comment** |
| MI\_Component.exe | Executable file | 300 KB AVG | N/A |

## Interfaces

N/A

## Error Handling

The error handling will be manage by:

|  |  |  |  |
| --- | --- | --- | --- |
| **Field name or screen name** | **Condition** | **Message** | **Message type (Error, Warning, Information)** |
| Serial number of Manual Wip tab. | If the Pallet Link option is selected and no Pallet serial number is captured. | Capture a Pallet Serial Number first or disable the Pallet Link option. | Information |
| Start of the application | If an error ocurrs when the application trying to connect to the databases. | It is not possible to access the database, please contact your systems administrator. | Error |

# Authorization Requirements

* The implementation of the production version must be approved by the Jabil’s Change Manager Board though a Change Request ticket.

# Prerequisites

The following prerequisites must be completed in order to start the project:

* Have access to the last available version of the MICT.
* Have access to the last available version of the Pallet Link.
* Have access to the both data bases of the MICT and Pallet Link.
* Have access to the Pdn MES terminal servers to publish the new app version.

# Hardware / Network requirement

The following hardware requirements are included into the project plan:

* Application server to host the executable file of MICT application. Windows Server 2012.
* SQL Server v2014 to keep hosting the 2 Databases. 20 Gbs of additional HD space will be required.

# Test Plan

The following test plan will be followed

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Step** | **System** | **Transaction** | **Steps with optional and mandatory input parameters**  **(Please check if test data are valid in the specified system!)** | **Expected Results** |
| 1 | MICT | MICT functions. | Test the actual MICT functions. | The MICT functions must work correctly just like currently done. |
| 2 | MICT | Pallet Link functions. | Test only the Pallet Link functions. | The pallet link function must work correctly just like currently done in the MICT |
| 3 | MICT | MICT and Pallet Link together. | Test the integration of the MICT and Pallet Link functions. | When the two options are selected both functions must be work correctly at the same time. |