Part A - Application Logic Software Changes Identification

For the existing installation of MICROLOK II, use the following step-by-step procedure to prepare the revised Application Logic software for the Reduced Test Validation Procedure (RTVP).

1. Record the following information on the MICROLOK II unit that is being subjected to Application Logic software change(s):

   Location Name: CP MINCHEW / ANB-596.40

   Current Application Logic source file directory and name P:\CSX\2015\39214\CP MINCHEW

   Current Application Logic Rev No.: - CRC: 63ed Checksum: 29bb

   MICROLOK II Executive Software running the location: MICROLOK II Executive

   Part No. and Rev. No. (If available) Unknown

   MICROLOK II Development System used: MICROLOK II Development Software

   Part No.: N800102-001 Rev. No.: 8.62

   Record any site-specific information stored in the Configuration EEPROM: _____

   > **Note**
   >
   > The MICROLOK II Development System containing the Compiler, Reverse Compiler, Comparison Tool, and Maintenance Tool loaded into your desktop or laptop computer, should be compatible with the Executive Software version being used.

2. Confirm that the archived Current Application Logic (This will be referred to as "current.ml2") is the actual application running in the MICROLOK II unit by following the steps below.

   a. The first step will be to upload the data tables from the MICROLOK II unit and reverse compile the data tables to produce a copy of the application logic program running in the MICROLOK II unit.

      Using the Reverse Compile option of the MICROLOK II Development System, request to upload the data from the MICROLOK II unit (the check box is labeled "get the input file from

the MICROLOK II unit"), and generate a reverse compiled application program. This program will be referred to as "running.mlr".

> **Note**
>
> The CRCs and Checksums of "current.ml2" and "running.mlr" may not match, due to the manner in which the Reverse Compiler generates the "running.mlr" file. However, this should not be a concern.

b. Using the Comparison Tool option of the MICROLOK II Development System, compare the "current.ml2" and "running.mlr" files. Obtain the Differences Report. Are there any "functional differences" identified? ☐ YES ☑ NO.

c. If NO functional differences are indicated, the archived Application and the running Application are identical and you can use the "current.ml2" as the official version and go to Step 3.

d. If functional differences are indicated in Step b above, then the archived version of the application does not match the application program that is running in the actual MICROLOK II unit. Archive "running.mlr" as the official application, (This will be referred to as "current.ml2"), and go to Step 3.

3. Make the necessary changes to "current.ml2". Refer to the changed file as "revised.ml2". Include a brief description of the change below.

   Brief Description of the change(s):

   The 2CRER and 6CRER equations were modified by replacing 2LWE with 2LWER and 6LWE with 6CLWER, respectively. Added PTC intent repeater for 6ARER.

4. Obtain the differences between the current application and the revised application using the following steps:

   a. Compile the "revised.ml2" from Step 3 using the Compiler option of the MICROLOK II Development System to obtain the "revised.mlp" file.

   b. Use the Reverse Compiler option within the MICROLOK II Development system and create "revised.mlr" based on "revised.mlp".

c. Use the Comparison Tool to compare "revised.ml2" and "revised.mlr" and obtain the Differences Report. Are any functional differences indicated? ☐ YES ☑ NO.

d. If functional differences ARE shown, this may be an indication that an electronic error occurred somewhere in the process. Contact the US&S RAIL team by telephone at 1-800-652-7276 or through Internet e-mail at railteam@switch.com.

e. If NO functional differences are indicated in Step c above, compare the "current.ml2" and "revised.mlr" files using the Comparison Tool, and generate the Differences Report.

5. Review the Differences Report carefully. Does it contain the expected differences?
   ☑ YES ☐ NO

6. If YES, prepare a documentation package consisting of the following:

   - The Revised Application Logic source file ("revised.ml2") with the modifications highlighted, and its CRC and Checksum listed.
   - The modified relay equivalent circuits or ladder logic diagrams if required by the customer.
   - The location layout sheet (including aspect chart if aspects are revised, and CAD drawings of external circuit revisions, if applicable).
   - The Differences Report that indicates the differences between the Current and Revised versions of the Application Logic.
   - This section of Appendix A, with all blanks and YES/NO entries filled out, and with the Application Engineer's signature as indicated below.

7. If NO, go back to Step 3, review the required changes, satisfy yourself that all the desired changes to the Application Logic are incorporated, and repeat Steps 4 through 6.

Once you are satisfied, attach the above documentation to this procedure and submit the whole package for customer approval.

Application Engineer Signature (in ink): _____ Date: _____

Part B - Reduced Test Validation Procedure

Note

This procedure is written for the use of US&S Application and Test Engineers. They must obtain the customer's approval prior to conducting the reduced test validation. This procedure can also be used by the customer's own Application and Test Engineers subject to the customer's internal approval process.

1. Using the Differences Report generated in Step 4.e of Part A, identify all the affected functions of the location, including sequential (downstream) effects of the logic changes.

2. Develop the Reduced Test Validation Procedure in full consultation with the customer, observing the Note below.

Note

The reduced tests are the minimum testing requirements recommended by US&S. They do not represent or supersede any current or future FRA testing requirements. The requirements are not representative of the official policy of any railroad signal department, unless adopted as such.

3. Submit the RTVP for customer approval, using the following template, with a transmittal letter signed by the US&S Project Manager or Project Engineer, as appropriate, and explaining the reason for the Application Logic software changes.

   - Cover Page (containing the title "Reduced Test Validation Procedure for <location name>" and submittal date).

   - Part A. Application Logic Change(s) Identification documentation package generated from Part A (Step 6).

   - Part B. The sequential RTVP steps, along with the forms to be used to record the results of the tests.

4. Conduct the RTVP after obtaining customer approval. Ensure that discrepancies, if any, arising during the test are resolved to the customer's satisfaction. Submit the test results to the customer. Ensure that any site specific configuration information was properly set to the correct values.