Instructions for Using the Software for
"Realignment of Curves (Ver. 1.0)"

This software has been developed based on the methodology given by Late (Dr.) M. Sheshagiri Rao, ex. MD/RITES, in his Ph. D. Thesis. The software has been developed by Shri R. K. Shekhawat, Senior Professor (Projects)/IRICEN/Pune, with the Coding in Python language by Shri A. A. Nizami, Sr. Instructor (Computers)/ IRICEN/Pune.

Please follow the step-by-step procedure given below:

1.   Download the "ROC_IRICEN" Zip File, in a folder on your computer. This folder contains all the required files and components. Therefore, the software can directly be run on Windows machine without any additional components.

2.   Unzip the "ROC_IRICEN" zip file and run the software by double clicking the "ROC.exe" file directly from the folder.

3.   On the opening Screen, please enter the data for the curve, if this curve is being solved for the first time, by opening the "New" Menu. Following details will be required:

    Railway:
    Division:
    Section:
    Line:
    Location:
    Curve No.:

    Station Number of the First Station:
    NB: Number of Stations before the start of the curve
    NC: Number of Stations in the existing curve (including both the Transitions and Circular portion)
    NE: Number of Stations after the end of the curve

    Stations wise details of Existing versines:

    Before entering the details of existing versines, please esnure that at least 3 stations on straights (i.e. stations with Zero versines) are entered.

    If the versines are badly disturbed or there is misalignment, before the beginning and/or after the end of the curve; then for better results or to avoid error in calculations, it is advisable that this misalignment is corrected (bringing the versines to Zero value) at 3-4 stations just before the start of the curve and at 3-4 stations just after the end of the curve.

4.   After entering the existing versine details, the existing versines table is displayed. This table can be edited using the buttons at the bottom of the versine table displayed. These details can be now be saved, either using the button at the bottom of the table or "Save Input" Menu button.

5.   For the curves, with versines data saved earlier, the versine table can be recalled using the "Open" Menu.

6.   The curve can now be solved for "Most Optimum Solution", which automatically calculates the transition lengths and gives least possible slews, using the button displayed on the screen. The solution containing "Proposed Versines" and "Slews" is displayed on the screen, with a plot of these values. This plot is dynamic i.e. its scale can be changed by simple roll of mouse. The solution can be printed directly or saved to an output file.

After solving the curve, if you are not getting "Zero" proposed versines at the first and/or last stations, then please add some more station with Zero versines, at that end of the curve, and solve the curve again.

7.   To check the adequacy of the transition lengths calculated, design other curve parameters and speed potential of the curve, the "Curve Calculator" can be invoked. By giving Maximum permissible values of Cant, Cant Deficiency & Cant Excess, Booked Speed of Goods Train and Maximum permissible Sectional speed, it calculates the values of Cant which can be provided from cant deficiency and Cant Excess Criteria. On entering the value of Cant being provided, it calculates Desirable and Minimum length of Transitions. On entering the actual length of transitions being provided, it calculates the Cant value which can be provided for the transition length being provided and the permissible Speed on the curve.

8.   If the curve needs to be solved for "specified transition lengths", the same can be done for any of the following three options:

   (a) Change only Leading Transition length
   (b) Change only Trailing Transition length
   (c) Change both Transition lengths

       On entering the length of required transitions(s), the revise solution is displayed, containing "Proposed Versines" and "Slews" along with display of these values. The solution can be printed directly or appended/saved to the existing output file. On this solution also, the "Curve Calculator" can be invoked and used.

9.   After saving the work done, exit by pressing "Exit" Menu button.

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For any problem in using this Software, please contact:

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