ANNEX E

MANDATORY REQUIREMENTS

The Bidder shall provide all the necessary and relevant data and information regarding its Bid Software, including the modifications, adaptations and adjustments required to comply fully with JTMT requirements and to allow JTMT to assess its capabilities and evaluate its suitability for the required project. Capitalized terms undefined herein shall have the definitions given to them elsewhere in the RFP Documents.

1. General – Software Requirements, Import/Export, Layer Configuration, Printing

1.1. The Bid Software shall support and produce Local Controller Logic Signal Timing Designs. A software package that is intended for the design of Signal Timing Designs that rely on the logic of a central traffic management system shall not be acceptable.

1.2. The Bid Software shall produce traffic signal design that does not target only specific controllers or specific traffic signals framework.

1.3. The Bid Software shall be developed from native code (C++, C#, Java etc.) and shall not be developed and run using macro code in an applications generator such as Ms-Access, Ms-Excel, Visio etc.

1.4. The Bid Software shall fully support and be capable of fully using all designs created using TSP that complies with the mandatory requirements set forth in this Annex E.

1.5. No Third Party licenses shall be needed to be purchased separately for using the Bid Software.

1.6. The Bid Software shall run on all supported Windows OS including the latest version.

1.7. The intersection design shall be saved in one file/directory that includes all the design data.

1.8. The Bid Software interface must be functional for the user in either English or Hebrew

1.9. The Bid Software shall include a user manual and a help feature.

1.10. The Bid Software shall enable the signal code generator to be used for signal control programming.

1.11. The printout booklet shall be in English or Hebrew.

2. Design Capabilities

2.1. **Basic**. The Bid Software:

2.1.1. Will be able to set a minimum green time for a Signal Group (vehicles w/o flashing green, pedestrians) and warn about and / or prevent green time in case of deviations (for example during interstages, skeletons or Scenarios).

2.1.2. Shall enable defining general description parameters for each intersection such as intersection ID, name, street, city, version,

designer details, customer details, authority details, status and project.

2.1.3. Shall enable defining Signal Groups of all kinds – vehicles, PT vehicles, pedestrian, bicycles, flashing amber, transit vehicle preemption signal, including characteristics of each type.

2.1.4. Shall enable defining Stages.

2.1.5. Shall enable defining Stage Sequence and Stage Transition.

2.1.6. Shall enable defining Pulses.

2.1.7. Shall enable defining vehicle detectors, pedestrian push buttons, and PT detectors, including characteristics and parameters.

2.2. **Inter-Green Times Matrix Data-Feeding and Calculations**. The Bid Software:

2.2.1. Shall enable defining and calculating conflict matrices between movements and manual inputs of all conflicting movement data needed for inter green time matrix calculation.

2.2.2. Shall enable defining characteristics for inter-green calculation, such as vehicle speed, acceleration, deceleration, pedestrian speed, vehicle length etc., for each movement.

2.3. **Defining and Designing Stage Transition**. The Bid Software:

2.3.1. Shall enable automatic calculation of Stage Transition.

2.3.2. Shall enable auto calculation of minimum Signal Group timing designs (skeletons), according to the Stage Transition and Stage Sequence chart, and will display the relevant Signal Group Timing Charts.

2.3.3. Shall enable defining multiple Programs, each with different parameters (e.g. cycle time, green times, offset…).

2.4. **Design Methods**. The Bid Software shall enable Stage-based methods.

2.5. **Timing Design Logic**. The Bid Software:

2.5.1. Shall enable defining logic code for signal design, including all the necessary parameters and variables.

2.5.2. Shall enable defining new functions that can be used for Timing Design Logic.

3. Quality Testing

3.1. **Defining and Running**. The Bid Software:

3.1.1. Shall enable defining and/or generating a large number of Scenarios (more then 1000) for a design.