Computer Models
For
Fire and Smoke

Model Name:	TSEA – Transient Simplified Egress Analysis
Version:	1.2
Date:	February 2014
Model Actively Supported?:	Yes.
Classification:	Egress Model
Very Short Description:	Transient Simplified Egress Analysis is designed to provide a broad understanding of egress flow times from the built environment accounting for key issues such as; population, transient flow characteristics and variable pre-movement times. 3d graphics are provided & tabular results for exit flow rates.
Modeler(s), Organization(s):	Matthew Salisbury BEng CEng MIFireE MSFPE, SFES
User's Guide:	A user guide is provided as part of the installation, accessed from the Help menu in the software.
Technical References:	SFPE Door, Corridor & Stair flow and PD 7974.6. All flow parameters can be set in the Options section of the program.
Validation References:	First principles calculations of exit flow. There are no independent validation reports available.
Availability:	www.fire-engineering-software.com
Price:	Freeware
Necessary Hardware:	Windows
Computer Language:	Visual Studio
Size:	5.5MB

Contact Information: support@fire-engineering-software.com

Detailed Description:

Transient Simplified Egress Analysis (TSEA) has been developed to support the need to provide a simple and visible method to calculate egress times from buildings which may be too complex for one-step hand calculations.

The software assesses occupant egress times based on a set of initial conditions. These have been simplified to:

1. The area of a space termed a floor(defined by a polygon, a plan of the floor can be used if desired);
2. The number of occupants in the space.
3. Occupants may have a pre-movement time which can also be used to assess a phased egress strategy. The pre-movement time may also be defined by a distribution.
4. Occupant walking speed is defined, which can also be a distribution, i.e. people can walk at different speeds/
5. Exits are defined by their width and exit type, i.e. a stair, a corridor or a doorway. Floors may have any number or type of exits.

Lifts, escalators and stairs can be modeled. Note that individual exit within a stair is not computed and a simplified flow rate in the stair itself is used. This significantly speeds the computation time.

The software addresses both people 'bumping' into one another for very dense scenarios and queuing at exits and also modifies walking speed based on occupants local density, i.e. crowds move slower etc.