

# FREQUENTLY ASKED QUESTIONS

## Trimble® Integrity Manager™

### 1. What is Trimble Integrity Manager?

Movement is an ever-present factor in GNSS reference networks. Movement from tectonics, subsidence or weather can significantly affect the position of reference antennas. Trimble Integrity Manager is designed specifically to make sure network operators understand the dynamics of their reference network.

Trimble Integrity Manager is a separate utility within the Trimble GNSS Infrastructure product family. It works in conjunction with Trimble GPSNet and Trimble RTKNet. Trimble Integrity Manager is available in Real-Time and Postprocessed versions.

### 2. How can I use Trimble Integrity Manager to manage my network?

Trimble Integrity Manager can be used stand alone or in conjunction with Trimble GPSNet and RTKNet to monitor the dynamics of a reference network. By detecting, alarming and measuring station movement, Trimble Integrity Manager ensures network operators are always the first to know the current status of the network.

Through a range of motion engines, Trimble Integrity Manager keeps you informed of station movement.

### 3. What types of alarms are available?

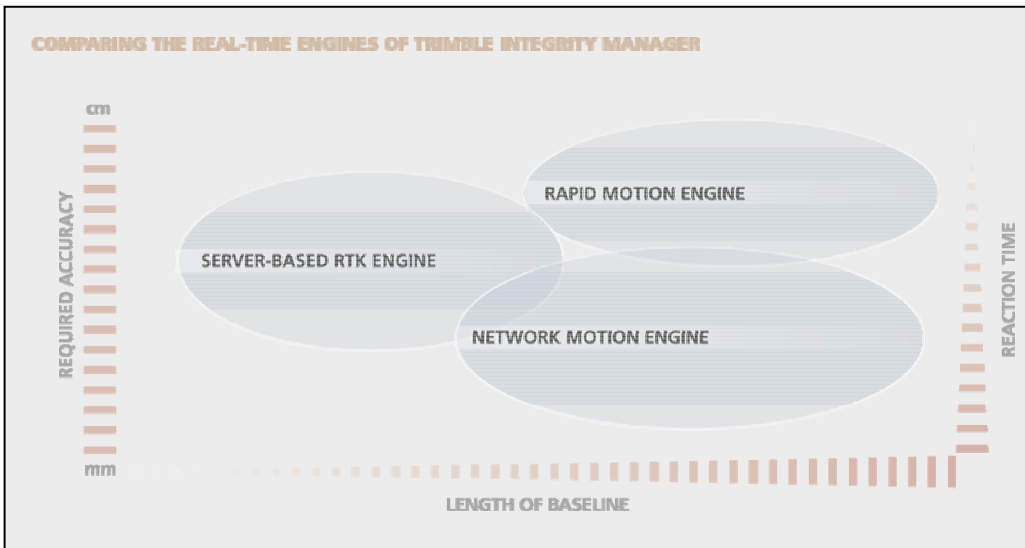
Trimble Integrity Manager will trigger alarms or warnings based on a variety of conditions including station displacement and receiver connection status. Alarm actions include the execution of a batch file, connecting to a TCP/IP server and sending e-mail or SMS. All alarm actions can be directed as needed, based on the location of the event.

### 4. Does Trimble Integrity Manager interact with GPSNet and RTKnet?

Trimble Integrity Manager and Trimble GPSNet/RTKnet are designed to run as separate applications on discrete computers. Trimble Integrity Manager is designed to complement the functionality of GPSNet and RTKNet and be an external watchdog to the system

**5. I see that there are multiple motion engines to manage my network. What are the differences between them?**

The combination of motion engines and alarming that you choose, depends on factors such as length of baselines and time to alarm. The chart below demonstrates the relationship between the various engines in regards to baseline length, time to alarm, precision required and reported information that your project demands.



**6. Does Trimble Integrity Manager support logging of data for postprocessing?**

Yes. Trimble Integrity Manager can log .DAT, .T01 and RINEX files.

**7. I operate a real time service, why would I be interested in postprocessed integrity management?**

Postprocessing over an extended time period can produce millimeter level precision. Measurements this precise are a necessity for evaluation of station stability and cyclical events. The post-processed engine can also be used for establishing initial coordinates of new reference stations for your real-time service.

**8. If I am only interested in the postprocessed engine do I have to purchase the real-time product?**

No. Trimble Integrity Manager can be purchased in a postprocessing only package. It is significant to note that the postprocessing-only package cannot be upgraded to real-time.

**9. What receivers are supported in Trimble Integrity Manager?**

All Trimble Infrastructure receivers are supported; this includes the 5700 CORS, NetRS and NetR5.

## **10. Does Trimble Integrity Manager support GLONASS?**

Yes. The Trimble Integrity Manager supports GLONASS in each of its processing engines and in data storage formats which support GLONASS.

## **11. How long does it take for Trimble Integrity Manager to detect movement and send an alarm?**

Detection of an alarm condition varies based on the processing engine and filter scheme applied to the observations. An alarm can be activated by one epoch of data if required. Filters are applied as needed to reduce the instance of false alarms.

## **12. Does Trimble Integrity Manager provide status reports?**

Yes. One of the main products of the Trimble Integrity Manager is generation of reports. Reports are created with the Report Generator function. Reports can be generated manually to document a specific period of interest or scheduled to run automatically at desired intervals.

## **13. What are the reporting features and options?**

The Report Generator queries an underlying SQL database to report on connection details, data storage, individual monitoring modules and system properties. Reporting options can be customized to any requirements through SQL programming.

## **14. What is the difference between the coordinate monitor in GPSNet and the functionality offered in Trimble Integrity Manager?**

The Network Motion Engine included with Trimble Integrity Manager utilizes similar algorithms to the Coordinate Monitor module included with Trimble GPSNet. As part of the Trimble Integrity Manager framework, the Network Motion Engine with an associated Integrity Monitor keeps a history of processing results in an SQL database for analysis.

## **15. Is it possible to run Trimble Integrity Manager as a distributed system?**

Yes. Trimble Integrity Manager is designed to be easily configurable as a distributed system. Load balancing between computers is as simple as drag and drop.

## **16. Does Trimble Integrity Manager run as a service?**

Yes. Trimble Integrity Manager runs as a service. The Service Administrator Utility manages the services and has functionality to restart services as well as alarm when a service fails.

## **17. Does Trimble Integrity Manager provide correction streams to rovers?**

No. Trimble Integrity Manager does not supply corrections to remote units. This is accomplished with Trimble GPSNet and Trimble RTKNet.

### **18. How many receivers will Trimble Integrity Manager support?**

The base configuration of Trimble Integrity Manager allows for 10 reference stations. Additional licenses are available in packages of 5. Trimble Integrity Manager is only limited in the number of stations it can manage by computer power and bandwidth limitations. Because of the ease of establishing distributed system, it is possible to manage as large a network as is practical to install.

### **19. Can the Trimble Integrity Manager user interface run on a different machine than the one running the database?**

Yes. The Trimble Integrity Manager UI can run on a different machine than the database. Multiple instances of the UI may run on different machines concurrently.

### **20. Can reports be generated on a different machine than the one running the database?**

Yes. The Trimble Report Generator can run on a machine other than the one which contains the database.

### **21. What operating system does Trimble Integrity Manager support?**

Trimble Integrity Manager supports Microsoft Windows XP Professional and Microsoft Windows Server 2003.

### **22. What database product does Trimble Integrity Manager use?**

Trimble Integrity Manager uses the freely distributed version of Microsoft SQL Server 2005. This version has a size limitation on the database of 4 GB.

### **23. Is the free 4 GB Microsoft SQL server adequate for my application?**

With default settings and one instance for each processing engine, the 4 GB capacity of the free MS SQL database supplied with Trimble Integrity Manager is capable of storing the data of 20 stations for 2 years.

The capacity of the database is affected by real-time update rates, the types and number of configurations (e.g. redundant baselines), database table lifetime settings and logging of extraordinary behaviors (e.g. alarms, status messages, etc.)

### **24. How long is data saved in the database?**

A table in the Trimble Integrity Manager database specifies how long observations will be kept. These values are configurable. The table also controls how long high-rate data is stored before it is parsed to conserve database capacity.

## **25. Do I need a dedicated server to run Trimble Integrity Manager? *What are the server specifications?***

It is recommended that a dedicated workstation or server be used for Trimble Integrity Manager. The specification is:

Microsoft Windows Server 2003, Service Pack 1 or later; Microsoft Windows XP Professional, Service Pack 2 or later, and one of the following:

- Dual processor, at least at 3.0 GHz, or
- Dual core processor, at least at 1.5 GHz, or
- Single processor with hyper-threading ability enabled, at least at 3.0 GHz.
- 2 GB RAM
- USB or parallel port for hardware key.

## **26. Does every machine running in a Trimble Integrity Manager installation require a hardware key?**

No. When Trimble Integrity Manager is configured as a distributed system across any number of machines only one of the computers in the system requires a hardware key.

## **27. Where do I buy Trimble Integrity Manager?**

Please consult your local Trimble Survey and Infrastructure distributor. Contact details can be found on the Trimble website at <http://www.trimble.com/locator/locator.aspx>

## **28. Do the Infrastructure applications engineers support Trimble Integrity Manager?**

Yes. Trimble Integrity Manager will be supported by Trimble GNSS Infrastructure applications engineers.

## **29. Is training available?**

Yes. Training is available through Trimble GNSS Infrastructure applications engineers.

## **30. Do I have to purchase Microsoft SQL server in addition to Trimble Integrity Manager?**

No. A free 4 GB version of MSSQL comes on the Trimble Integrity Manager installation CD.

## **31. Does Trimble Integrity Manager have FTP functionality?**

Yes. Trimble Integrity Manager can mirror data to a remote FTP server.