



# Visualyse Spectrum Manager

## Licence Management for the 21<sup>st</sup> Century

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### What is Visualyse Spectrum Manager?

Visualyse Spectrum Manager is a new, innovative approach to management of the radio spectrum.

It handles all the key tasks including:

- Licence application
- Licence processing
- Licence search and display
- Technical analysis
- Management and reporting
- Engineering

What makes Visualyse Spectrum Manager (SM) unique is does all of this over the internet.

Visualyse SM is the first web based spectrum management solution, the model for licence management for the 21<sup>st</sup> Century.

In this document we give an overview of how Visualyse SM could reduce the cost of management of the radio spectrum while improving user experience and creating a range of new opportunities.

We describe the features of Visualyse SM including:

- Licence processing
- Management tasks
- Engineering support

### Licence Processing

Visualyse Spectrum Manager supports the whole licence processing workflow:

- Licence application including data entry
- Licence examination (checks on parameters, whether it would cause or suffer interference, and international obligations)
- Approval process with workflow varying by licence type
- Revocation and surrender

- Applications for change of use / licence variation

Our sophisticated yet easy to use approach is based upon an architecture using spectrum product templates.

These make data entry and creation of licence records simpler as they do the hard work including:

- Only presenting to the user the required fields
- Setting suitable default values
- Mapping fields entered to the underlying database, completing all the fields needed (e.g. setting the right spectrum masks)
- Calculating derived values, including in some cases undertaking frequency planning
- Converting units where necessary

The screen shot below shows an example of a template to enter fixed link parameters to initiate the frequency planning process:



We have built in over 20 templates for the common licence classes including Land Mobile, Fixed Service, Radio Astronomy and Satellite Earth Stations.

Visualyse Spectrum Manager is designed using technology neutral principles, and is able to fully support a liberalised spectrum management regime.

Our workflow and user management builds upon the latest technology including use of Active Directory to control rights and processes.

*Contact us for further information and white papers*

## Management Tasks

Visualyse Spectrum Manager is designed as an enterprise strength application built upon robust Microsoft SQL Server and the .NET Framework.

It contains all the tools needed for management to keep track and control of their radio spectrum, including:

- Control on users and their access rights
- Auditing and reporting tools
- Central repository of licence records in SQL database
- Integrated definition and modification of spectrum plans
- Modification of key work flow stages via the spectrum product templates

## Engineering Tasks

Visualyse Spectrum Manager is designed to support the full license approval process including technical analysis.

Visualyse SM is not a set of forms upon a legacy application: all the intelligence is on the server.

This includes technical analysis such as:

- Parameter checks
- Checks on interference into other licences, as in the figure below.



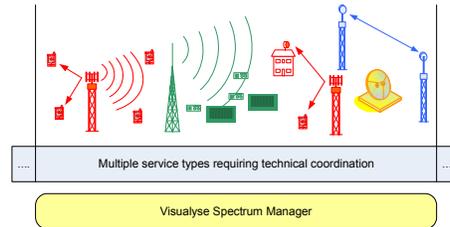
- Checks on interference from other licences
- Checks against international constraints such as PFD levels to be met on country boundary as specified in bi-lateral agreements
- Search for licences and display upon a map
- Export of licence data to desktop tools such as our Visualyse Professional for further detailed analysis

Our powerful interference engine is able to analyse any combination of licences defined via our templates.

It undertakes all the necessary checks automatically, even working out the type of analysis from static link budgets up to full detailed Monte Carlo simulations.

It takes account of locations, gain patterns, propagation models, terrain data, clutter data, power levels, receiver sensitivity, TX spectrum masks, RX filter masks, pointing angles, traffic levels and much more.

It can model anything into anything, as in the figure below.

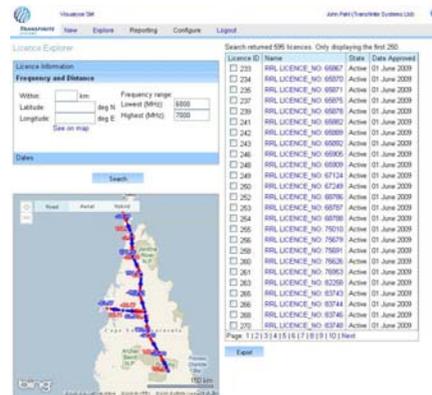


## User Access

Because Visualyse SM is web based it can be accessed by a whole range of user types including internal managers and engineering staff but also external users.

Because we include secure log-in and rights managed by Active Directory, you can provide services to your stakeholders with confidence, sure that access will be vigorously controlled.

For example you can provide a service to allow stakeholders or selected individuals the ability to search and view licences within the database, as in the screenshot below.



## Benefits of Visualyse Spectrum Manager

Visualyse SM is the first 21<sup>st</sup> Century licence management solution.

It brings the power of the internet to spectrum management, and offers key benefits to your organisation:

- It provides all the key functionality in one web based application, without the need to switch between desktop programs or export data
- It provides an improved user experience, with templates and workflow designed with the latest technology
- Its centralised database provides vigorous data integrity and audit control
- All its services can be accessed anywhere by any user – with a security system that ensures that access rights are enforced
- Its can manage a single block of spectrum, a set of blocks, or all the spectrum in a country
- It can be integrated with the latest GIS technology, such as Google Maps and Microsoft Virtual Earth
- It is ready for the 21<sup>st</sup> Century, for Web 2.0, for cloud based computing and open services
- It is able to integrate with other web based applications for a “best in class” approach
- It is designed to be technology neutral, ready for a liberalised, converged approach to spectrum management

Visualyse SM can be licensed in a variety of forms, including pay per use. We are ready and able to provide global spectrum management – via the web.

## About Transfinite

We are one of the leading consultancy and simulation software companies in the field of radio communications.

Our business activities can be broadly categorized into three main areas:

- Consultancy services
- Visualyse software products
- Technical training