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■ WINTER 2011 - 2012

Founders' Perspective

Geography Jones and the Temple of Data

2012 is a high-profile year – the last year of the Mayan calendar, the subject of big-budget Hollywood blockbusters, and the release of the most amazing version of FME in history. We couldn't resist the urge to combine all three of those items and kick off the launch of FME® 2012 with a tip of the hat to classic adventures - of the spatial variety.



Don and Dale quickly realized they were at the wrong 2012 event, but decided to pause for a corporate back-to-back photo anyhow.

In this issue, follow along as our global crew of FME users shares their stories – finding gold in vintage data while decommissioning a nuclear plant in Sweden, tackling hordes of climatology data requests in Switzerland, and helping protect the public in Athens, Georgia.

Whatever your Temple of Data holds – XML, CAD, 3D, GIS, raster, or point cloud – FME 2012 is the indispensable tool that you want in your satchel. Read about new usability enhancements, developments in point cloud handling and coordinate system support – and pay a visit to the Faculty of XMoLogy, where “I Love XML” is our mantra.

2012 is big year for FME Server too – sensors, real time, and notifications are hot topics right now, and not just for spatial. Check out FME Server 2012 developments like push messaging that will help you get the right data to the right people, right away.

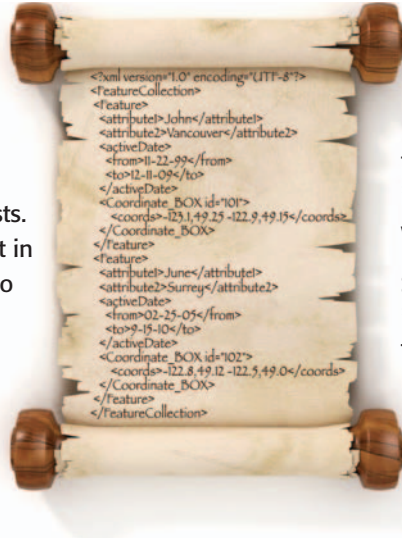
And coming soon to a venue near you... the FME 2012 World Tour will be a globetrotting adventure in its own right! Join us – and your peers – in over 30 cities worldwide this year to swap tales and exchange ideas on how to tackle your next spatial quest. See you there!

The Faculty of XMology

Epigraphists and papyrologists devote their academic careers to the study of reading and writing obscure forms of communication like Maya hieroglyphs and ancient Egyptian papyrus, indecipherable to most of us regular folks.

Here at Safe? Well, you can call us the XMologists. We've devoted an enormous development effort in FME 2012 to provide you with a Rosetta stone to help interpret the multitudes of XML dialects.

We've added and improved a selection of transformers, including the XMLFlattener and XMLFragmenter, and added new XQuery functions and XHTML support. The most exciting additions, however, are the new XMLSampleGenerator and XMLUpdater.



The XMLSampleGenerator creates an XML document based on an XML Schema (.XSD), which you can use to create entire XML documents, or portions of XML documents – or feed it into the XMLTemplater to create templates. The XMLUpdater lets you update individual values within an existing XML document without having to recreate the entire document.

Speaking of dialects – new XML formats for 2012 include AIXM 5.1, INSPIRE, OS VectorMap™, and Top50NL readers. And our new CityGML 1.1 reader/writer also supports ADEs.

Do you have an XML Challenge? Think you can stump our panel of XMologists? Visit www.safe.com/ilovexml and send us your examples!

Must-Have New Tools for Your Next Expedition

Every time an adventurer strikes out on a new quest, he's relying on quick wits and the right tools to tackle the challenges ahead. Well, our FME users definitely have the quick wits – and keep telling us that FME is the right tool. How can we make it even better? FME 2012's usability enhancements, as always, come from your suggestions. Here are some highlights:

Fullscreen Mode

Hit F11/Shift-F11 to toggle Fullscreen Mode. Whether your workspace is the size of the Sahara Desert, or you're working on an 11-inch laptop in the jungle, maximize your screen real estate.

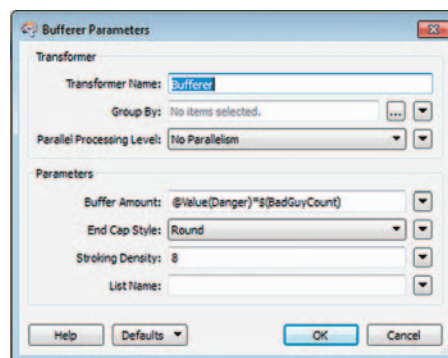
Attributes and Parameters

It would be a lot easier to get to the top of Chichen Itza if you could eliminate a few of those huge steps... and the same goes for your workspace. Check out the system-wide enhancements to attribute and parameter handling in FME 2012.

Now you can concatenate strings and evaluate expressions right in the dialog of the transformer that is going to use them. Let's say you want to generate a buffer zone around the Great Pyramid. Now you can compute the buffer size from attributes

and parameters – right inside the Bufferer, replacing multiple transformers with just one.

Equally exciting is the expanded role of the AttributeCreator, which can now aggregate the functions of multiple attribute handling transformers into one central location. These enhancements mean less steps to get to where you want to be. You'll be at the top before you know it.



Direct access to parameters and expression evaluation combines multiple transformers into one.

Python. Why'd it have to be Python?

The days of ophidiophobia are over! Python® support in FME 2012 is not only completely overhauled, but well within the capabilities of more users than ever. A

complete rewrite from the foundation up, with extensive documentation and samples to learn from, our new Python API is part of FME Objects, which means expanded access to feature geometries and full access to FME readers and writers. Python is possibly the most popular and attainable scripting language in use today – explore the possibilities.

InlineQuerier

Rumor has it that the Druids moved monoliths over great distances by repeatedly placing logs in front of them. With the same logic, you can create a primitive sort of database query in FME by stringing together FeatureMergers. Functional, but not all that efficient. With the new InlineQuerier, construct temporary databases in your workspace and execute SQL-style queries and joins against data that isn't natively database. If you're using FeatureMergers, give this a spin!

These are just few of the enhancements coming your way in FME 2012 – and if you have a great idea for 2013, let us know. Every release brings new tools and better ways to solve those interoperability challenges.

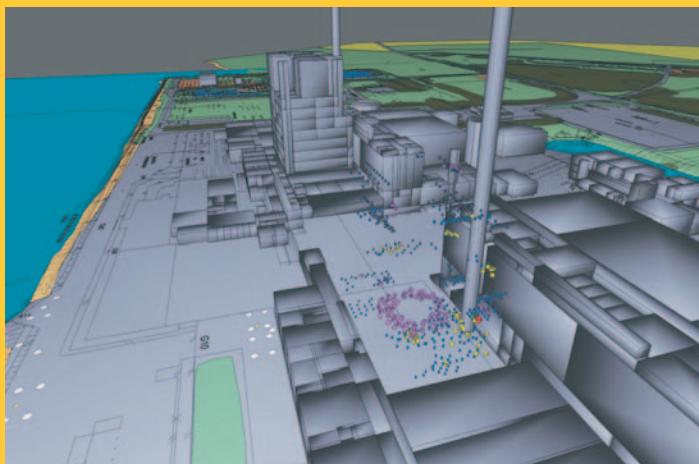
Check out What's Great in FME 2012 at www.safe.com/whatsgreat2012.

FME and the Vault of Data – in 3D!

Every intrepid adventurer worth his salt has found himself standing in front of a massive structure, cryptic antique map in hand, deciphering how he's going to run the gauntlet of traps inside and get to the treasure.

In the real world, vintage data has real value too. The challenge is how to use current technology to get the most out of it – a scenario that decommissioning engineer Lars-Olof Jönsson was facing when it came time to decommission the Barsebäck nuclear power plant, constructed in the early seventies. They knew that they wanted the benefits of a 3D model in the early stages of the plan – and turned to Ulf Månsson and Johan Sigfrid at Sweco Sweden for assistance.

Sweco's tool of choice was FME. The only information at hand was non-georeferenced 2D CAD data, produced by scanning and digitizing the original paper As-Builts. The first step was to apply



a real-world coordinate system, using FME and a series of control point files. Each drawing was then separated by floor, and each floor elevated to its true height above ground.

Room numbers are a key piece of data for the nuclear industry, and so the rooms were defined and attributed. The walls were set to their true width, extruded to 3D, and then holes were “punched” in the floors for rooms with vertical height spanning multiple floors. A one-meter square grid index was generated for both the interior of the facility and the surrounding grounds.

The last step in data preparation was to combine all of these with geology, surface, radioactivity and chemical sampling data – and then it was ready to send to 3D Adobe® PDF and 3D AutoCAD® DWG.

Sweco also produced “Intelligent Paper” – location-aware paper prints used for both indoor and outdoor surveying and sampling, and reintegration of the results into the master dataset.

“Decommissioning a nuclear plant takes a well thought out plan,” says Lars-Olof Jönsson. “Using FME for the quick and early generation of 3D models from vintage As-Builts supports logistics planning, volume estimating for demolition, and effective visualization and presentations.”

And so with FME and some quick thinking, our spatial data adventure comes to a successful conclusion, bringing historical data and current technology together for the benefit of all!

The interior and exterior 3D model of the Barsebäck nuclear plant was generated from 2D vintage data.

Really Big Point Cloud News

Working with a billion-point LiDAR dataset? Bring it on! With FME 2012's point cloud handling improvements, tile a billion-point dataset in under six hours. And if you're an Oracle® user, our shiny new Oracle Point Cloud reader/writer may astound you with its performance.

On the topic of formats, not only is LAS 1.0 – 1.2 supported, but now LAZ compression can reduce your datasets to between 10 to 30% of their former size.

2012 brings new point cloud processing features too – cubic clipping tiles your data in three dimensions, useful for eliminating points that throw out your vertical scale. New color and intensity filtering options can assist with primitive feature extraction, and colorization from rasters provides new ways to visually present your data.

Learn about point cloud support in FME at www.safe.com/pointclouds.

The World Isn't Round

Throughout history, philosophers and mathematicians have come up with new ways to describe our planet. Today, we spatial types define it with geoids, projections, and coordinate systems. And with every release of FME, we add new interpretations of where things are.

FME 2012 not only adds a selection of local coordinate system support options, including NTV2 datum shifts for a number of European countries, but we've also expanded vertically. Geocentric projections – essential for point cloud handling – are now supported, as well as geoid heights.

Looking forward – check back in early 2012 for Blue Marble GeoCalc library support. If your workflow depends on Blue Marble results, now you'll be able to incorporate that in your FME workspace – and what flexibility that opens up!

The world may not be round – but we have a multitude of ways to deal with it!

FME Server Now With Push Notifications

FME Server 2012 has powerful new notification capabilities! If the terms “Push Notification”, “Business Rules” and “Complex Event Processing” are part of your daily vocabulary, you can skip the rest of this article and proceed directly to the enthusiastic celebration. If, like most of us, they aren’t, let’s take a look at what that means for FME Server users.

Let’s say you’ve been searching for that rare original Collectors’ Edition DVD of “Indiana Jones and the Raiders of the Lost Ark” online. You have two choices – you can either obsessively check the website every five minutes to see if someone has one for sale, or you can simply set up a notification to email you when one becomes available. That’s a “push”. In the first “pull” scenario, you are wasting time continually checking to see if something exists. The same holds true for systems – continuous monitoring wastes cycles, time, and system resources. It’s much more efficient to just respond to a push.



Notifications, also called messages, can be exchanged between people, systems, devices, and sensors. Let’s follow our DVD as it leaves the courier depot and heads towards your house for delivery. As the package is put on the truck, a barcode scanner captures that action, and updates a database, indicating that it is now on truck #7 – push. Truck #7 is outfitted with GPS tracking, and as it pulls out of the depot,

its current location, speed, and direction is transmitted wirelessly to a central GIS system – push. FME Server detects new incoming data and updates a web-based map display at Dispatch – push.

Truck #7 arrives at your house, parks, the package is removed, barcode

scanned again, and left in your mailbox. This brings us to Complex Event Processing. The system has several pieces of information. FME Server uses a workspace to determine that truck #7 is stationary, within a reasonable distance of your house, and the package has been removed. It can infer that your DVD has now been delivered, and perform yet another push – sending you a message. Events and data – like being stationary and what a reasonable distance is – are interpreted based on business rules that are simple to set in your FME Desktop-authored workspace.

This is a highly simplified version of notifications, but the concepts translate to a multitude of applications. By using FME Server as the notification engine behind the scenes, you can seamlessly integrate spatial data, non-spatial data, and logic in near real time, and extract even more value out of your dynamic data. Enjoy your movie.

Learn more at www.safe.com/notifications.

Adventures in FME Server Administration

When an FME Server administrator is trying to get out of the office to head out on a rip-roaring archaeological adventure, there are only two things on his mind – getting the job done faster and better. FME Server 2012 helps accomplish both.

Only have ten minutes worth of sand left in the hourglass before the door to the secret passageway slams shut forever? You’ve got time to install FME Server. With the new Express installer, a complete installation takes less than

ten minutes. And easier distributed installation shaves even more time off of your IT load. If you’re really in a rush, use the new FME Server AMI to get going in even less time – with no infrastructure requirements.

Being pursued by a horde howling for data? With new Microsoft Active Directory® integration in your back pocket, you can manage them with ease. Applying security rules and roles has never been easier, and gives tighter and more granular control over user and author access.

FME Server 2012 – spend less time on administration, and more time on your next quest.

Sensors Everywhere!

One of the reasons we’re so excited about FME Server’s new real time capabilities is the potential to connect our world with the explosion of sensors that are available. Push – more specifically, URL post – is the way they communicate.

From consumers to emergency response to industry, sensors are everywhere. Electrical monitors, security cameras, smartphones, home automation technology, even stickers you can put on your dog are pushing messages, and proliferating at an incredible rate.

FME Server can help you turn this barrage of real time data into useful – and actionable – information.

See more at www.safe.com/sensors.

MeteoSwiss Tames Climatology Data with FME Server

As the national provider for weather and climate services in Switzerland, MeteoSwiss has a lot of data. Monitoring a climate that ranges from near-Mediterranean to alpine glacial, with unique local phenomena like the föhn winds, they collect information from an array of surface observation systems and remote sensors, including radar, satellites, and radio soundings. The data supports weather forecasting, climate analysis, and high-resolution modeling of developments in the alpine region, ultimately warning authorities and the public of dangerous weather conditions.

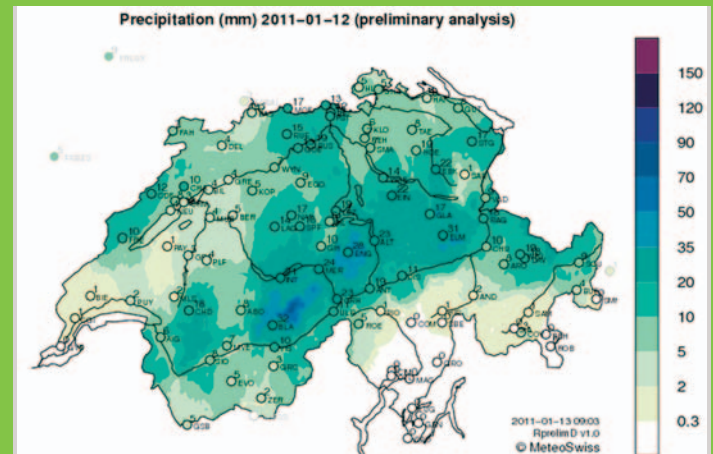
And the information can change as quickly as, well, the weather.

To tackle this mountain of data, MeteoSwiss brought in the experts at INSER SA of Le Mont-sur-Lausanne – and FME Server – to enhance their existing Data Warehouse System with an infrastructure to deal with gridded spatial data. The goal was to collect, store, prepare, and distribute both the gridded climatology data and its metadata. They designed a system with two primary components – one to handle the collection and preparation of the data, and the other to facilitate end-user access.

On the collection side, FME Server handles automated importing of NetCDF, GIF, Esri® ASCII Grids and assorted GIS formats to a central geodatabase raster catalog, along with the population of a metadata repository. Data aggregation and QA is performed along the way.

Data consumers have a variety of FME Server-enabled choices on the delivery side. Automated exports are available, and a flexible framework design lets users customize delivery or incorporate it into other systems. Format-wise, NetCDF, TIFF, ASCII, and GIFs annotated

with metadata are output, plus a web streaming service providing RDATA rasters. “FME’s flexibility has let us develop or integrate custom interfaces to some exotic formats like NetCDF and R”, says Pierre Terretz of INSER.



FME’s Python support also helped realize the project – handling GIF metadata annotation, job automation, some file operations, unusual data interpretation, and external application communications.

Now that the system is in production mode, users are seeing the benefits daily, with ease and efficiency of access not possible until now. “We were very impressed with how open-minded, flexible and responsive Safe was to our sometimes quite unusual requirements,” says Estelle Grueter of MeteoSwiss. “We’ve had a very good experience so far and look forward to further collaboration with INSER and Safe. Thanks very much!”



There just may be a pot of gold at the end of this rainbow over Machu Picchu...

FME and the Silver-Lined Cloud

There are riches to be found in the clouds! For those adventurous souls who make the arduous trek to the heights of the Andes, it’s the cultural treasure trove of the Lost City of the Incas. For FME users, it’s the wealth of opportunity that FME’s proven cloud support opens up.

Explore the possibilities of the Amazon – the Amazon Machine Image (AMI), that is – providing the fastest route possible to FME deployment in the cloud. And with FME Server’s new notification capabilities, the push communications you need are ready to go.

Cloud-specific formats are emerging as a viable alternative for storing and serving up your valuable data, and FME 2012 supports them as well, including Microsoft Windows Azure™, Azure OGD, Google Fusion Tables™ (both Spatial and Non-Spatial), and Google Spreadsheets. With access to databases hosted in the cloud, and XML and JSON support, you’ve got the tools you need in your pack to take your next trek to loftier heights.

FME User Spotlight:

Lou Manglass, GISP, Athens-Clarke County Police Department,

Systems Analyst II, FME User for 6 months

What are you working on right now?

Lots of things! My main focus is on keeping our 911 maps and location information up to date in our Intergraph® dispatch system. Lately, we've been using FME to bridge the gap between the County's Esri system and ours.

What challenges do you see coming for Law Enforcement?

Acquiring trained geospatial analysts is becoming critical. It's comparable to officers. They need to have training and equipment to do their job properly, continually practice their skills, adapt to the changing landscape of law enforcement, and keep the best gear they can acquire in full working order. That's an analogy any Police Department can understand.

What's your favorite FME Transformer?

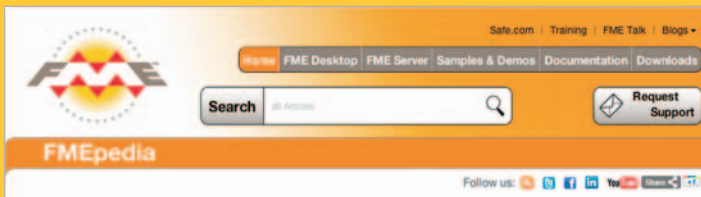
I'm a big fan of the testers, keepers and filters, because I have been moving my QA to FME. Since we do a lot of processing, the ability to perform and capture QA information has helped us streamline our process, be more accurate, and log our results.

Do you have any tips for other FME Users?

Get creative. FME can make the impossible possible, with ease. FME doesn't take much training to get started, and it rewards the user for exploring the transformers.

What are you doing when you're not working?

I used to be an avid backpacker, but it's hard to make time for a good trip. For efficiency, I've moved on to hobbies I can do in shorter bursts, closer to home. My electronics workbench keeps growing as I keep acquiring new chips and test equipment, and I've been drawing a comic on and off for the past five years. <http://www.yawcomic.com/>



The New FMEpedia Knowledge Base

Adventurers on globetrotting quests have to fly by the seat of their pants – relying on their own ingenuity and knowledge to solve each challenge that comes their way. If only they had FMEpedia!

FME users have access to this treasure trove of information on all things FME. And with a recent redesign, it's more useful than ever. Check out this unified resource center to find:

- Over 900 articles, searchable by category, including How To, FAQ, Samples and Demos, and Errors and Unexpected Behavior
- Quick access to the most popular articles and most recent articles
- Every piece of documentation related to both FME Server and FME Desktop
- A dedicated Samples and Demos page to explore FME Desktop and FME Server features and functionality
- New Topic Pages to gather together resources pertinent to your subject of interest

Why a redesign? Well, the new FMEpedia centralizes access to all of your support resources through a single portal, and replaces the multiple locations you previously needed to visit to find what you need. In short, you'll get answers faster and easier than ever before.

Visit the new FMEpedia Knowledge Base at www.fmepedia.com.

FME Training Updates

Our FME Training Program is constantly evolving to meet our user's needs, and 2011 brought exciting new changes, including a catalog of online course offerings that has brought FME education to more users than we ever imagined. And of course, 2012 brings innovative new ways to learn too.

On-Demand Online Training – FREE!

Want to learn at your own speed, at your own convenience? Check out our On-Demand FME Desktop Online course – absolutely free. This pre-recorded online class is available to you anytime at www.safe.com/ondemand.

Check our online course catalog throughout 2012 as we add new topics at www.safe.com/catalog.

Mastering FME 2012 – Online Class

Spend a half-day in our online classroom and learn how to use FME 2012's great new features. Three dates are available – and as a thank you for FME Insider readers, enter the Promo Code INSIDER2012 for your free seat in the class.

February 2, 2012

Register at www.safe.com/master2012feb2

February 8, 2012

Register at www.safe.com/master2012feb8

February 14, 2012

Register at www.safe.com/master2012feb14

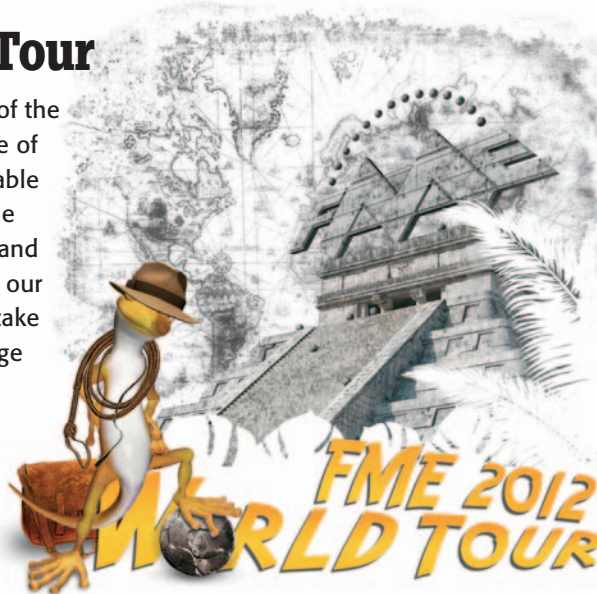
FME 2012 World Tour

Join Geography Jones and the rest of the FME crew on the greatest adventure of 2012! Between poring over inscrutable XML schemas, narrowly escaping the clutches of voracious point clouds, and finding gold in ancient information, our global network of adventurers will take time out to congregate and exchange intelligence on how best to tackle their next spatial crusade.

We've dragged the Tiger Moth out of the hangar and filed a flight plan that will touch down in over 30 cities worldwide – so go to www.safe.com/worldtour2012 to check the itinerary and reserve your seat now – space is limited!

Join your peers, tip your fedora, and look to the horizon:

- Get the latest on new features in FME 2012
- Learn how the new capabilities in FME 2012 can help your workflows
- Build your FME skills through how-to and best practice sessions
- Get tips and practical new ideas via presentations from FME users
- Receive technical assistance from FME Certified Professionals



- Network with FME adventurers from other organizations
- Enjoy fun, food, prizes, and special offers

Where, you say? Here's a preliminary agenda:

Location	Date
Auckland, NZL	May 8
Austin, USA	April 18
Australia (locations & dates TBD)	May
Barcelona, ESP	June 4
Berlin, DEU	June 11
Calgary, CAN	April 25
Copenhagen, DEN	Sept. 7
Denver, USA	April 16
Dubai, UAE	May 2

Dublin, IRE	Sept. 10
Düsseldorf, DEU	June 6
Edmonton, CAN	April 24
Kansas City, USA	April 16
Kuala Lumpur, MYS	July 11
Los Angeles, USA	April 19
Madrid, ESP	June 5
Montreal, CAN	May 1
Munich, DEU	June 20
Oklahoma City, USA	April 17
Online (YVR)	April 27
Ottawa, CAN	April 20
Paris, FRA	April 4
Quebec City, CAN	May 2
San Francisco, USA	April 20
São Paulo, BRA	May 30
St Louis, USA	April 17
Stockholm, SWE	Sept. 5-6
Toronto, CAN	April 19
UK (locations & dates TBD)	September
Vancouver, CAN	April 27
Victoria, CAN	April 25
Vienna, AUT	Sept. 25
Washington, USA	April 18
Winnipeg, CAN	April 23

Mores dates and cities to come! Check the website for the latest schedule, and register for the event nearest you! If you can't attend in person, join our live broadcast from Vancouver, Canada on April 27th.

Check out all the details at www.safe.com/worldtour2012.

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- **The FME Evangelist:** Discover tips and new FME features - evangelism.safe.com

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- **@FMEDoctors:** Discuss your technical matters with FME experts
- **@FMEevangelist:** Find out about cool features in FME and get helpful tips
- **@FMEBetaBuilder:** Receive automated updates on new FME betas

About FME

The FME technology platform makes it possible to transform spatial data to use and share. It solves more spatial data transformation challenges across more formats than any other solution, making it easier for professionals to solve data interoperability headaches and help their organizations meet their business goals and required standards.

Today, FME is the dominant technology for spatial data transformation. It powers our FME Desktop and Server software and the solutions of more leading spatial data application vendors than any other technology. It's used by tens of thousands of customers worldwide across a wide range of industries. FME is made by the experts at Safe Software. Learn more about achieving total spatial data mastery at www.safe.com

Unlock the Secrets of Spatial with the FME Webinar Library

It just might rival the Library of Alexandria! If you're searching for knowledge on spatial data transformation, the FME Webinar Library is the place to be. This selection of on-demand webinars covers a range of topics, data types, and transformation challenges.

Get started with FME, learn something new, or get new ideas on how to tackle

old problems – there's something for everyone. And our webinar schedule for 2012 will see new topics added by popular demand – always provided at no charge.

Browse the library or register for upcoming webinars at www.safe.com/webinars.

Iain McCarthy,

Product Release Manager –

Joined Safe Software in November 2008

What is your role here at Safe?

I'm the Build and Release Team lead – we're the ones who ensure that FME is as perfect as possible when a release goes out. We constantly monitor functionality, performance and stability and strive for constant improvement!

So FME goes through some pretty rigorous testing then.

QA is critical – we run each build through thousands of tests. For most of the year we're building and releasing betas three or more times a week, in addition to annual releases and interim service packs.

Do you have an adventurous streak?

Perhaps! I have my Private Pilot's License, and once flew down to Reno for the air races in a Cessna. Things didn't go exactly as planned, including a diversion to Vancouver International due to weather, but we got there eventually. That was a great trip.

We hear you like to fly down hills, too...

I can't wait to get my 18-month-old son out on skis – Vancouver is a great place to live for that.



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