



# **Our Experiences With Online Selling Using 11i EBS and iStore**

**David Dalley and Dale Ogilvie  
Trimble New Zealand**



## **Our Experiences With Online Selling Using 11i EBS and iStore**

Trimble has been working with Oracle iStore for the past 3 years and made effective use of it for online selling. Given this we thought we might share our experiences with other Oracle users locally. There are not many Oracle iStore users in this region but here are some examples we have found internationally.

- <http://store.trimble.com>
- <http://www.viewsonicstore.com>
- <http://leisure.ordnancesurvey.co.uk>
- <http://www.worldvision.org/worldvision/master.nsf/sponsor>

# Learning Objectives



- **As a result of this presentation, you will be able to:**
  - Have insight into online selling in our context
  - See why we choose Oracle iStore
  - Know what skills are needed to implement
  - Understand what Trimble achieved
  - Have a taste of the technical side
  - Recognize the interface and screens



## Learning Objectives

We have tried to incorporate a mix of business objectives and technical detail in the hope of having general appeal. By the end of this you will not be an iStore expert but you will have an understanding of what some newbie's to this have learnt in 3 years.

## Speaker's Qualifications



- David Dalley and Dale Ogilvie **form part of the Business Systems Team at Trimble**
- David is presenting first half and has a business requirements and outcomes focus.
- Dale is presenting second part of today's presentation and has a technology focus.



### Speaker's Qualifications

David and Dale both work in the Business Systems Group at Trimble New Zealand. David manages this group and will focus on business requirements and outcomes. Dale is a senior software engineer and will focus on the technology.

David has a Surveying Degree from the University of Otago and has worked for the past 15 years at Trimble in a variety of technical and marketing roles based in New Zealand, California and England.

Dale has a Computer Science Degree from Massey University and has worked for the past 8 years at Trimble in various development and system administration roles.

# Presentation Agenda



- **Our Company and Online Store Objectives**
- **Choosing Oracle iStore**
- **Team, Approach and Skills**
- **Timing and Outcomes**
- **System Architecture**
- **Development Cycle**
- **Configuration and Customization**



## **Presentation Agenda**

We are starting with a little information on Trimble to provide some context on how we organize ourselves. This provides a foundation to talk about some specific aspects to convey what we have learnt and achieved.

# Introducing Trimble



*Connected Construction Site*



*Precision Agriculture*



*Mobile & Field Worker*



*Advanced Devices*



## **Trimble Navigation**

Trimble is an international company with a presence in the Americas, Europe and this part of the world. We are headquartered in Silicon Valley, California and publicly listed on the NASDAQ stock exchange. We develop and sell positioning-based products for Construction, Agriculture and Mobile Field Workers.

## **Trimble New Zealand**

Trimble New Zealand is a wholly owned subsidiary with a focus on product development and marketing and employs approximately 200 people in Christchurch.

## **Trimble's Business Systems Structure**

Our business systems are focused around 11.5.9 eBusiness Suite and are centralized in the US with access globally. To support this model we have a core group of IT people responsible for support, maintenance, cloning and deployments with a number of divisional business systems groups working on new functionality. Dale and I plus 3 others make up a New Zealand-based business systems group working for the Field Solutions Division. In 2004 the GIS Group within the Field Solutions Division began to look at selling online.

# Online Store Objectives



- **Create new distribution channel**
  - Trimble direct sales online
  - Pick up business missed by existing channels
- **Modernize existing distribution channel**
  - From faxes to online entry
  - Spread cost, self help and real time
- **Ensure level playing field for both channels**
- **Phased approach**



## **Create New Distribution Channel**

The primary objective for pursuing an online store was to grow revenue by marketing and selling direct to customers via the Internet. Market research had told us that a portion of customers who bought similar products were not aware they could have purchased from our local distributor. We saw an opportunity to create a new parallel distribution channel without sacrificing revenue from our existing one, which would yield revenue growth.

## **Modernize Existing Distribution Channel**

As a secondary objective we wanted to modernize how we transact business with our buy-resell distributors. Typically these distributors send an email or fax with the details for their order and we would enter and process the order. We saw an opportunity to spread the cost of this by having them enter the orders online with the overall benefit of having better access to information and a more interactive, real time system. Overall this would have them be involved and spread some of the existing cost associated with processing orders.

## **Ensure Level Playing Field For Both**

We recognized that a customer store would be perceived as competing so we developed a strategy to mitigate the downside as much as possible. The strategy saw us making sure that customers who purchased via the store paid much the same as buying through a distributor and if they wanted they could name their local distributor and we would pay a commission to the distributor leaving them in a neutral financial position.

## **Phased Approach**

Given these objectives we felt we were well placed to get the distributor store setup and at its announcement explain the overall strategy. This way distributors could have some time to use the store and get used to upcoming changes. Also it fitted our development approach and resource plan.

## Choosing Oracle iStore



- **Using Financials, OM and Manufacturing**
- **Integration with EBS a requirement**
- **Didn't want to be in development business**
- **Weren't aware of 3<sup>rd</sup> party solutions**
- **iStore seemed feature rich and customizable**
- **Settled on iStore**



### Choosing Oracle iStore

We choose to use Oracle iStore as the foundation for our project. At the time of making this decision in 2004 we were using 11.5.9 Financials, Order Management and Manufacturing so we had a significant investment in Oracle eBusiness Suite. There was a desire to leverage this existing investment and in doing so expose the appropriate features of 11i to our customers. Developing a custom solution was not considered in depth as we did not want to be in the business of developing software of this nature so an off the shelf solution was most appropriate. We did look around for a non Oracle solution but nothing appeared to provide the integration so we settled on Oracle iStore. We did perceive the user interface to be a weakness but we figured that we could work on this over time given the ability to customize. Also we discovered along the way that we were already licensed for the product so there was no additional cost.

## Team, Approach and Skills



- **Two people new to iStore and EBS**
  - Project mgmt ↔ technical focus
  - Reading, used Vision and attended training
  - Setup site around Vision and reviewed regularly
  - Negotiated requirements to lower customization
- **Team grown to 3 Full Time Equivalent**
  - Project management and process integration
  - Technologist (apps and underlying technology)
  - Store content, configuration and admin



### **Two People New To iStore and eBusiness Suite**

The project was initiated in August 2004 with a team of two, David Dalley and Dale Ogilvie. At the time we were part of a business systems team but had no involvement with eBusiness Suite or iStore. David has a project management and business integration focus and Dale a technology and implementation focus so the skills were complementary. We really did not know much initially but took the attitude that this cannot be too hard. Installing Vision, reading the implementation and user guide, and attending a 1 week training course got us into the swing of things. Because this was an off the shelf product we decided it best to keep the user requirements at a high level so we could make the most of the off the self functionality and minimize customization. We set portions of the store up on Vision for demonstrations and held periodic reviews of functionality. Where absolutely necessary, we customized.

### **Team Grown to 3 Full Time Equivalents**

Team has now grown to 5 with good mix of skills where on average we are about 65% focused on the store so equivalent to 3 people. We divide the work along these lines and this will give an understanding as to specialist skills that benefit.

- Project management and business process integration
- Technologist capable of working with applications and underlying technologies
- Store content focused around HTML content and media
- Oracle applications data management focused around items and pricing



# Timing and Outcomes



- **Store for existing channel @ 6 months**
  - Complete set of product information
  - Quite complex discounting and offers
  - Payment on credit terms
  
  - <http://partnerstore.trimble.com>



## **Store For Existing Channel @ 6 Months**

The store was introduced to distributors in May 2005, which was approximately 6 months after the project was started. Close to release we had the product marketing team participate by providing and reviewing content. The store listed a full set of products and a full set of marketing and technical information that we would normally make available. Our sales organization based graduated discounts off of net prices so this caused issues for Oracle pricing. To accommodate this we modified some of our programs. The store also helps distributors to manage their credit by displaying invoices and payments on the site.

Some observations after doing all this:

- Some distributors are quick to adopt and use it 100% of the time and others resist.
- Some distributors have existing business systems and they want us to look at closer integration.
- Some distributors have minimal business systems and want us to provide more online.

# Timing and Outcomes



- **New distribution channel @ 18 months**  
(Some distractions adding 6 months)
  - **User registration**
  - **Freight estimation**
  - **Credit card processing**
  - **Distributor selection**
  
  - **<http://store.trimble.com>**



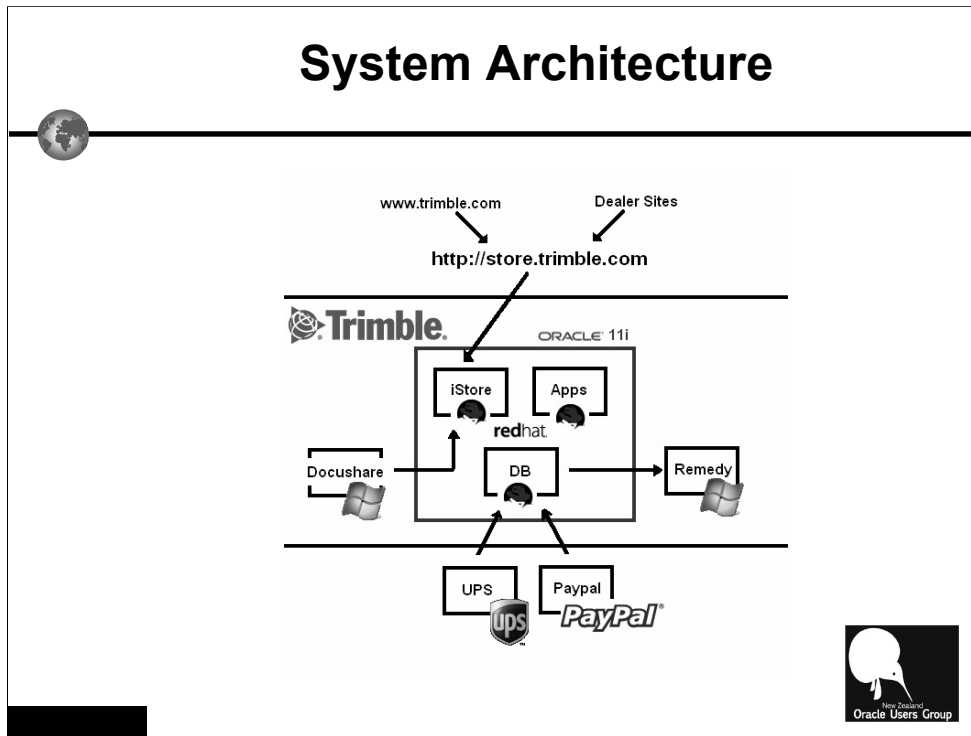
## **New Distribution Channel @ 18 Months**

The store was introduced to customers in May 2005. This was about 6 months later than necessary, but we were distracted with creating a service parts store plus others. We implemented a number of custom features that were not provided by iStore and had more configuration work to complete. When the store was released it had an engine for estimating freight based on product weights and shipping destination. Customers could pay by credit card with secure management of credit card information and we implemented a distributor selection page that would result in the distributor being paid a commission. Overall the store was well received and we have promoted it using direct marketing and advertising.

Some observations after doing all this:

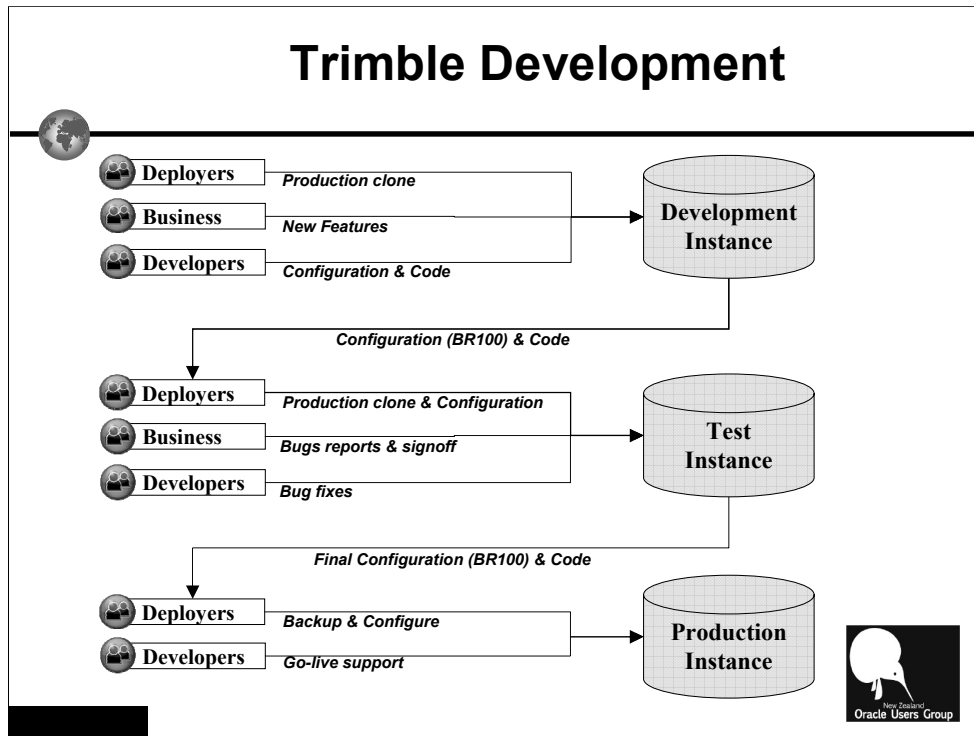
- Our customers are happy to place orders online and are making use of it.
- We have had issues with credit card fraud so high levels of fraud protection are important.
- Two channels can coexist without one significantly impacting the other.

# System Architecture



## System Architecture

- Trimble.com & Dealer sites direct customers to store, Google to a lesser extent
- iStore hosts the store web application
- DB Tier underlies Oracle 11i
- Apps Tier provides Forms administration
- Docushare running on Windows provides content for iStore
- Remedy receives warranty information for purchased parts
- UPS provides shipping costs
- Paypal authorizes credit card transactions



## Trimble Development

- Clone PROD to DEV oracle instance
- Feature selection for new release
- Develop on DEV
- Create “BR100” document detailing changes
- Clone PROD to UAT for “user acceptance test”
- Separate deployment team action BR100 onto UAT.
- Full test on UAT by business, fix bugs, refine BR100
- Deployment team action BR100 onto PROD
- BR100 useful resource looking back

## Two Development Options



- **Configuration**
- **Customization**
  
- **We have done both**



### **Two Development Options**

- Configuration – modify iStore as Oracle expects and has provided for.
- Customization – write code to extend the application

## Configuration - Tools



- **Oracle University Training**
- **Oracle Apps Documentation Library**
- **VISION rapid install**
- **Oracle Forms**
- **iStore Administration web application**



### **Configuration - Tools**

- Patching may be necessary if on an older release. Products involved include IBE, QOT/ASO, OM, IBY and OKS, CSI, ECE for service contracts.
- Profile options govern application behavior
- Oracle responsibilities restrict users to certain stores

## Configuration – Setup



- **Inventory Setup**                    **5%**
- **Price List maintenance**        **5%**
- **iStore Administration**           **90%**
  
- **Maintaining the store the three categories of work are about equal.**



# Inventory Setup

- Two simple toggles, many parts...

The screenshot shows the Oracle Master Item (TGL) form for item 61000-00, GeoXH Handheld. The form is titled "Master Item (TGL)" and includes the following fields and options:

- Organization: TGL Trimble Global Item Master
- Item: 61000-00
- Description: GeoXH Handheld [M]
- Display Attributes: Master (selected), Org, All
- Navigation tabs: MPS/MRP Planning, Lead Times, Work In Process, Order Management, Invoicing, Service, Web Option
- Web Status: Published (dropdown menu)
- Orgerable On the Web:  (checkbox)
- Back Orderable:  (checkbox)
- Minimum License Quantity:  (text field)

The "Orgerable On the Web" checkbox is highlighted with a red box, indicating it is the focus of the slide. The "Back Orderable" checkbox is also visible but unchecked. The "Minimum License Quantity" field is empty.



Inventory setup is almost just a checkbox in a single form



# Price List Maintenance

- Just add (all) the parts...

Advanced Pricing - Price Lists

Main Other

Name: **MGIS - iStore Customers USA US\$**  Mobile Download  Active

Description: **MGIS - iStore Customers USA US\$**

Currency: **USD** Round To: **5**

Effective Dates: **26-JAN-2006** -  Payment Terms:

Freight Terms:  Freight Carriers:

Comments:

List Lines Secondary Price List Qualifiers

Product	Product Attribute	Product Value	Product Description	Application Method	Value
<b>Item</b>	<b>Item Number</b>	<b>61000.00</b>	<b>GeoXH Handheld</b>	<b>Unit Price</b>	<b>5295.00000</b>

Price Breaks Pricing Attributes

New Zealand Oracle Users Group

Pricing for iStore comes from Oracle Pricing. Pricing in the store is always in synch with pricing in the rest of e-Business suite.

# iStore Administration

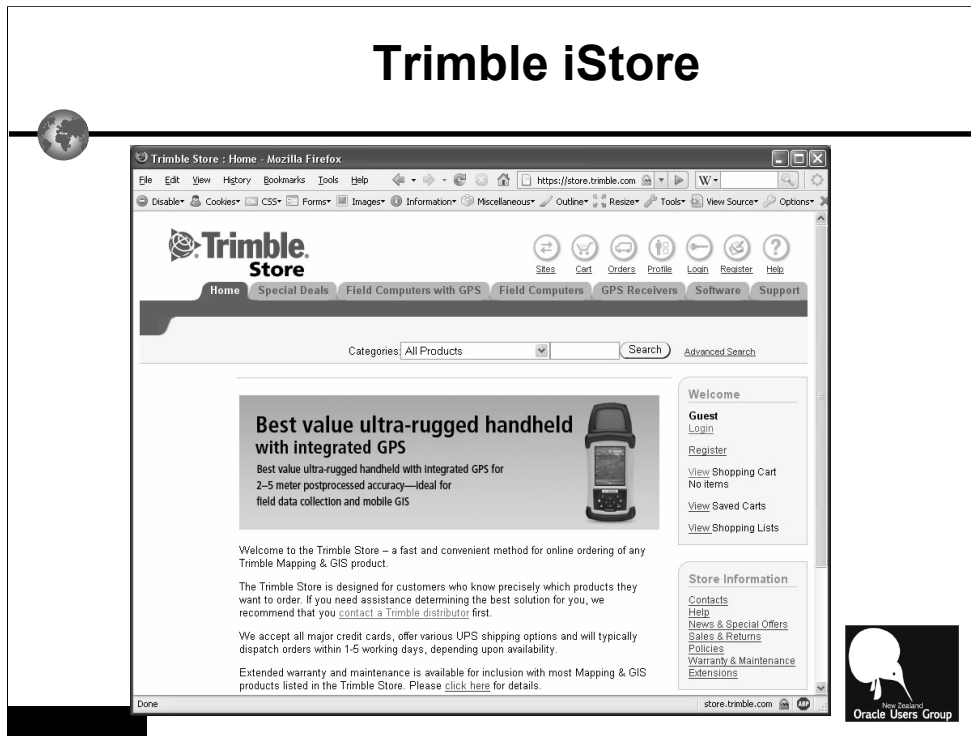


- **Sites (stores)**
- **Sections (pages)**
- **Products (Sections have products)**
- **Content (Products have content)**



Sections have content as well.

# Trimble iStore



Most things on the home page have been configured or customized by Trimble to a greater or lesser degree.

Store Logo

Icons

Tab bar

Home page content from docushare

Store Information bin

Welcome bin

# Behind the scenes



The screenshot shows the Oracle Applications 'Sites' page in Microsoft Internet Explorer. The browser's address bar shows the URL: `http://usd-an-isa-93.trimblecorp.net:8000/OA_HTML/favorites.jsp`. The page header includes the Oracle logo and navigation tabs for 'Sites', 'Catalog', 'Content', 'Reports', and 'Advanced'. Below the header, there is a 'Summary' section and a 'Sites' section with a description: 'This page displays the list of sites. You can create a new one by clicking the Create Site button or you can update an existing one by clicking the buttons on the table.' A search box is present with a dropdown menu set to 'Active Sites' and a 'Go' button. Below the search box is a 'Create a Site' button. The main content is a table with columns: 'Select Name and ...', 'Code', 'Last Updated Date', 'Updated By', 'Start Date', and 'End Date'. The table contains several rows of site information. The row for 'Mapping & GIS Customer Store' is circled in red. At the bottom of the table, there are buttons for 'Duplicate', 'Update', and 'Preview'. The browser's status bar at the bottom shows 'Done' and 'Trusted sites'.

Select Name and ...	Code	Last Updated Date	Updated By	Start Date	End Date
<input type="radio"/> Mapping & GIS Business Partner Store		07-SEP-2006	EKING	01-MAY-2005	
<input checked="" type="radio"/> Mapping & GIS Customer Store		20-MAY-2006	GISCONFIG	20-MAY-2006	
<input type="radio"/> Mapping & GIS Dealer Store		25-APR-2005	DDALLEY	13-APR-2005	
<input type="radio"/> Mapping & GIS GSA Store		02-AUG-2005	DOGILVIE	02-AUG-2005	
<input type="radio"/> Mapping & GIS Panasonic Reseller Store		16-AUG-2005	EKING	31-AUG-2006	
<input type="radio"/> Mapping & GIS Service Parts Store		04-DEC-2005	DOGILVIE	04-AUG-2005	
<input type="radio"/> Trimble Partner Store	TRMUS	19-MAR-2005	DOGILVIE	13-FEB-2003	
<input type="radio"/> Trimble Partner Store Europe		19-MAR-2005	DOGILVIE	19-MAR-2005	



# Site Properties

The screenshot displays the 'Update Site: Details' form in a Microsoft Internet Explorer browser window. The browser's address bar shows the URL: `http://usd-an-isa-93.trimbicorp.net:8000/OA_HTML/belMStrStsStoreDetail.jsp?it`. The Oracle Applications logo is visible at the top left of the page, and navigation tabs for 'Sites', 'Catalog', 'Content', 'Reports', and 'Advanced' are at the top right. A left-hand menu contains options like 'Summary', 'Site Detail', 'Language', 'Pricing', 'Payment', 'Shipping', 'Responsibility', and 'Access'. The main form area is titled 'Update Site: Details' and includes a 'Revert' and 'Apply' button pair. A note states '\* Indicates required field'. The form fields are as follows:

- \* Site Name: Mapping & GIS Customer Store
- Site Code: [Empty]
- Site ID: 10140
- Description: Mapping & GIS Customer Store
- \* Start Date: 20-MAY-2006
- End Date: [Empty]
- \* Default Language: American English
- \* Default Currency: US Dollar
- \* Default Walk-in Price List: MGIS - iStore Customers USA US\$
- \* Catalog Root Section: MGIS Dealer Catalog

At the bottom of the form, there are three checkboxes:

- Allow un-registered users to browse the site
- Allow customers to check item availability
- Restrict customer access by responsibility
- Enable Threshold for Payment Types

Another 'Revert' and 'Apply' button pair is located at the bottom right of the form. The browser's status bar at the very bottom indicates 'Trusted sites'.

# Sections – The Catalog

Oracle Applications  
Sections | Products | Relationships  
Catalog Hierarchy

Search  
Section Name [ ] [Go] [Advanced]

Hierarchy  
To isolate the display to a section, click on the "Focus" icon next to the section.

Select a Section and ... [Preview] [Duplicate] [Update] [Delete]

Expand All | Collapse All

Select Focus	Section	Section Code	Type	Status	Start Date	Sections	Products
○	▼ Root		Navigational	Published	02-MAY-2000	+	+
○	▼ MGIS Dealer Catalog		Navigational	Published	30-MAR-2005	+	+
○	▶ Field Computers		Navigational	Published	30-MAR-2005	+	+
○	▶ Field Computers with GPS		Navigational	Published	30-MAR-2005	+	+
○	▶ GPS Receivers		Navigational	Published	30-MAR-2005	+	+
○	▶ Home		Navigational	Published	30-MAR-2005	+	+
○	▶ Software		Navigational	Published	30-MAR-2005	+	+
○	▶ Special Deals		Navigational	Published	30-MAR-2005	+	+
○	▶ Support		Navigational	Published	30-MAR-2005	+	+

Trusted sites

New Zealand Oracle Users Group

Seven top level sections will appear as tabs in the store navigation bar.

## Sections – The Store



The screenshot shows the Trimble Store website in a Mozilla Firefox browser window. The address bar displays "https://store.trimble.com". The website features a navigation menu with links for Home, Special Deals, Field Computers with GPS, Field Computers, GPS Receivers, Software, and Support. A search bar is located below the navigation menu. The main content area highlights a product: "Best value ultra-rugged handheld with integrated GPS". The product description states: "Best value ultra-rugged handheld with integrated GPS for 2-5 meter postprocessed accuracy—ideal for field data collection and mobile GIS". To the right of the product description is an image of the handheld device. Below the product description, there is a welcome message and several paragraphs of text. On the right side of the page, there is a "Welcome" section with links for Guest, Login, Register, View Shopping Cart, View Saved Carts, and View Shopping Lists. Below that is a "Store Information" section with links for Contacts, Help, News & Special Offers, Sales & Returns, Policies, Warranty & Maintenance, and Extensions. The footer of the page includes the text "Done" and "store.trimble.com".

Tab ordering is different in the store from the section ordering This is controlled through the Admin UI.

# Sections – A Tree

The screenshot shows a web browser window titled 'Catalog Hierarchy - Microsoft Internet Explorer'. The address bar shows the URL: [http://usd-am-ha-93.trimblecorp.net:8000/OA\\_HTML/ibeMCS5tHierarchy.jsp?i=](http://usd-am-ha-93.trimblecorp.net:8000/OA_HTML/ibeMCS5tHierarchy.jsp?i=). The main content is a table representing a catalog hierarchy tree.

Select	Focus	Section	Section Code	Type	Status	Start Date	Sections	Products
<input type="radio"/>		▼ Root		Navigational	Published	02-MAY-2000		
<input type="radio"/>		▼ MGIS Dealer Catalog		Navigational	Published	30-MAR-2005		
<input type="radio"/>		▶ Field Computers		Navigational	Published	30-MAR-2005		
<input type="radio"/>		▼ Field Computers with GPS		Navigational	Published	30-MAR-2005		
<input type="radio"/>		▼ GeoExplorer 2005 Series		Navigational	Published	30-MAR-2005		
<input type="radio"/>		Configurations		Featured	Published	30-MAR-2005		
<input type="radio"/>		Extended Warranties		Featured	Published	30-MAR-2005		
<input type="radio"/>		Maintenance		Featured	Published	30-MAR-2005		
<input type="radio"/>		Optional Antenna Accessories		Featured	Published	30-MAR-2005		
<input type="radio"/>		Other Optional Accessories for GeoExplorer 2005 Series		Featured	Published	30-MAR-2005		
<input type="radio"/>		Other Related Products		Featured	Published	30-MAR-2005		
<input type="radio"/>		Replacement Parts for GeoExplorer 2005 Series		Featured	Published	30-MAR-2005		
<input type="radio"/>		Software		Featured	Published	30-MAR-2005		
<input type="radio"/>		▶ Trimble Recon GPS Series		Navigational	Published	30-MAR-2005		
<input type="radio"/>		▶ GPS Receivers		Navigational	Published	30-MAR-2005		
<input type="radio"/>		▶ Home		Navigational	Published	30-MAR-2005		
<input type="radio"/>		▶ Software		Navigational	Published	30-MAR-2005		

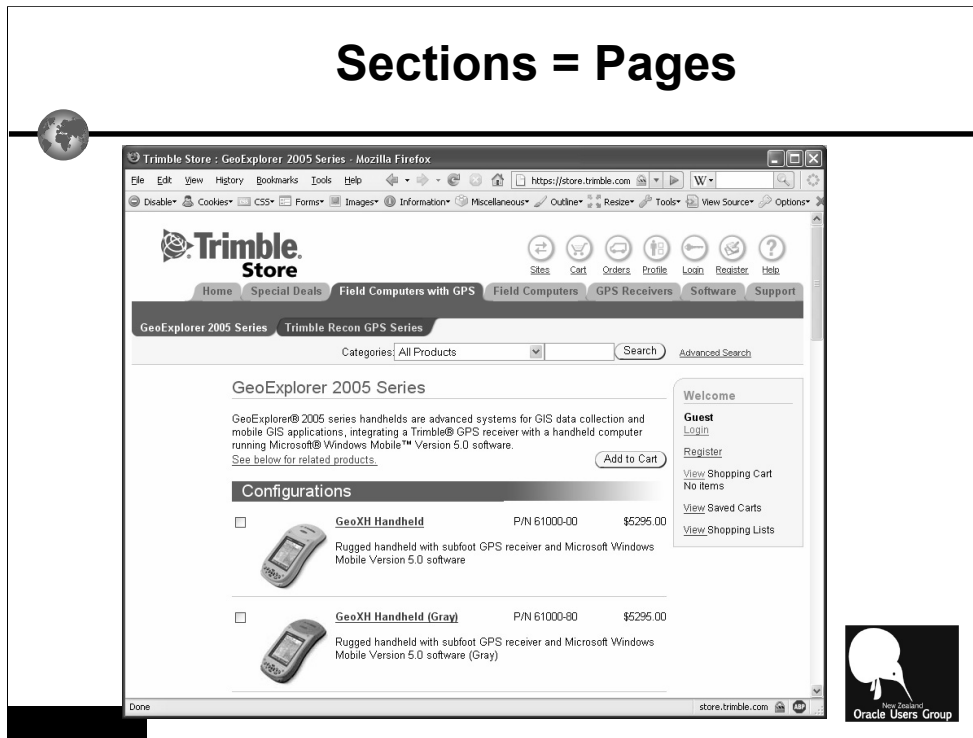
The 'GeoExplorer 2005 Series' section is highlighted with a black box. The browser status bar at the bottom shows 'Trusted sites' and the 'New Zealand Oracle Users Group' logo.

Deeper down the catalog hierarchy we find sections containing Trimble products.

In this case I have highlighted the Field Computers with GPS, GeoExplorer 2005 Series, Configurations sections.



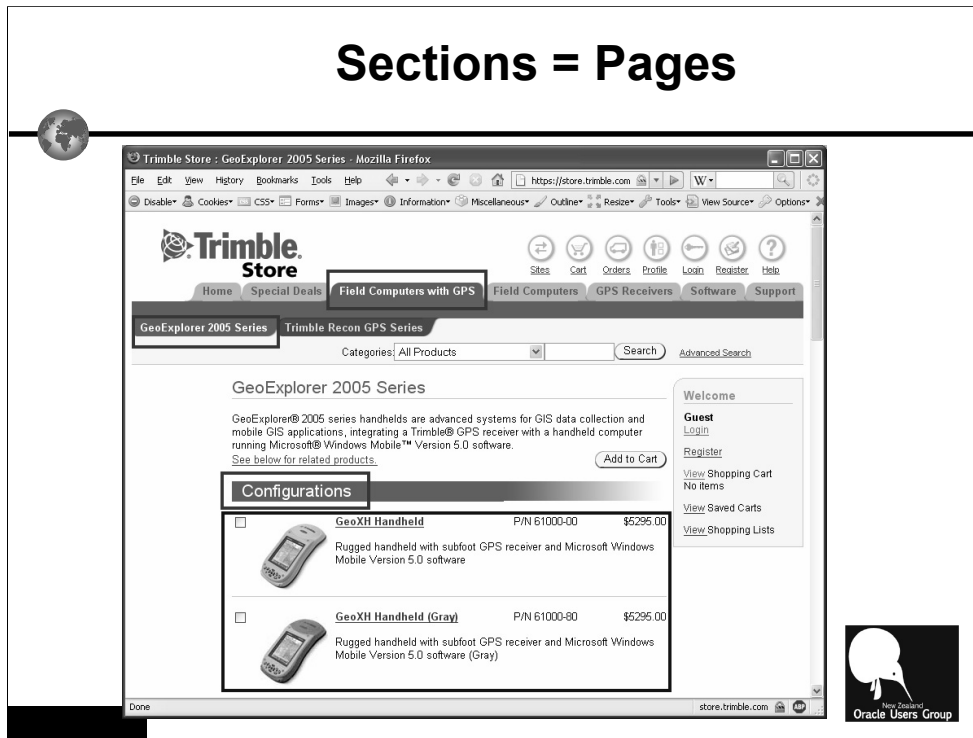
# Sections = Pages



This is what the Field Computers with GPS, GeoExplorer 2005 Series, Configurations sections looks like in the store.

This is an example of a page where our customers buy our product.

# Sections = Pages



A top level section becomes a top level tab in the store UI.

The next level down becomes a second level tab.

And further sub-sections are displayed inline here. This is controlled by a section display template customized by Trimble.

Products are added to sections in the store using the admin UI.

# Sections Have Products

The screenshot displays the 'Add Product Assignments' page in Oracle Applications. The page title is 'Add Product Assignments - Microsoft Internet Explorer'. The Oracle logo and 'Oracle Applications' text are visible at the top. The page includes a navigation menu with 'Sections', 'Products', and 'Relationships'. The main content area is titled 'Update Product Assignments' and shows the following details:

- Section Name: **Configurations**
- Description: (empty)
- Hierarchy Path: **Root/MGIS Dealer Catalog/Field Computers with GPS/GeoExplorer 2005 Series/**

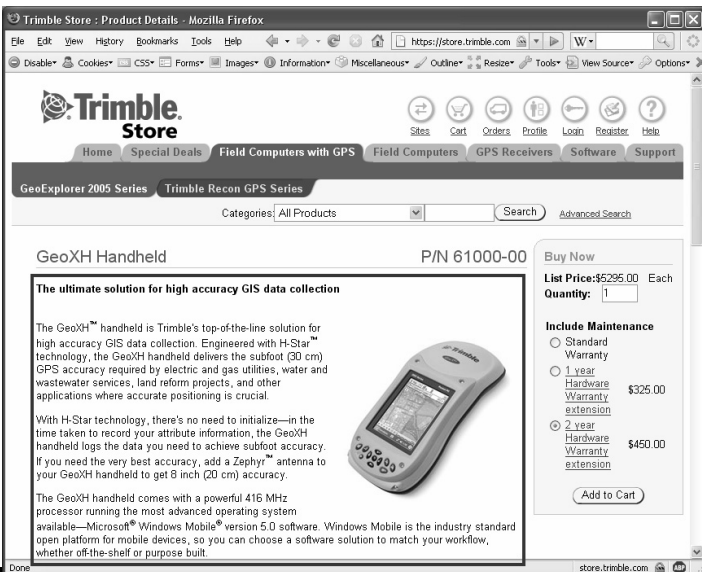
Under the 'Products' section, there is a tip: 'TIP Save your work by clicking Apply before moving to another page.' and a button 'Add Products to Section'. Below this is a table of products:

Select Product and ...	Remove	View	Published	Start Date	End Date
<input type="checkbox"/> 61000-00		GeoXH Handheld	✓	03-OCT-2005	
<input type="checkbox"/> 61000-80		GeoXH Handheld (Gray)	✓	03-OCT-2005	
<input type="checkbox"/> 61000-20		GeoXT Handheld	✓	03-OCT-2005	
<input type="checkbox"/> 61000-70		GeoXT Handheld (Gray)	✓	03-OCT-2005	
<input type="checkbox"/> 61000-50		GeoXM Handheld	✓	03-OCT-2005	
<input type="checkbox"/> 61000-75		GeoXM Handheld (Gray)	✓	03-OCT-2005	

The product '61000-80 GeoXH Handheld (Gray)' is highlighted with a black border. The table also includes 'Select All', 'Select None', and 'Go' buttons. At the bottom right, there is a logo for the 'New Zealand Oracle Users Group'.

In the admin UI you can add, remove and end-date products that have been “web-enabled” in Oracle inventory.

# Products Have Content



**Trimble Store**

Home Special Deals Field Computers with GPS Field Computers GPS Receivers Software Support

GeoExplorer 2005 Series Trimble Recon GPS Series

Categories: All Products Search Advanced Search


**GeoXH Handheld** P/N 61000-00

**The ultimate solution for high accuracy GIS data collection**

The GeoXH™ handheld is Trimble's top-of-the-line solution for high accuracy GIS data collection. Engineered with H-Star™ technology, the GeoXH handheld delivers the subfoot (30 cm) GPS accuracy required by electric and gas utilities, water and wastewater services, land reform projects, and other applications where accurate positioning is crucial.

With H-Star technology, there's no need to initialize—in the time taken to record your attribute information, the GeoXH handheld logs the data you need to achieve subfoot accuracy. If you need the very best accuracy, add a Zephyr™ antenna to your GeoXH handheld to get 8 inch (20 cm) accuracy.

The GeoXH handheld comes with a powerful 416 MHz processor running the most advanced operating system available—Microsoft® Windows Mobile® version 5.0 software. Windows Mobile is the industry standard open platform for mobile devices, so you can choose a software solution to match your workflow, whether off-the-shelf or purpose built.



**Buy Now**

List Price: \$5,295.00 Each  
Quantity: 1

**Include Maintenance**


Standard Warranty

1 year Hardware Warranty extension \$325.00

2 year Hardware Warranty extension \$450.00

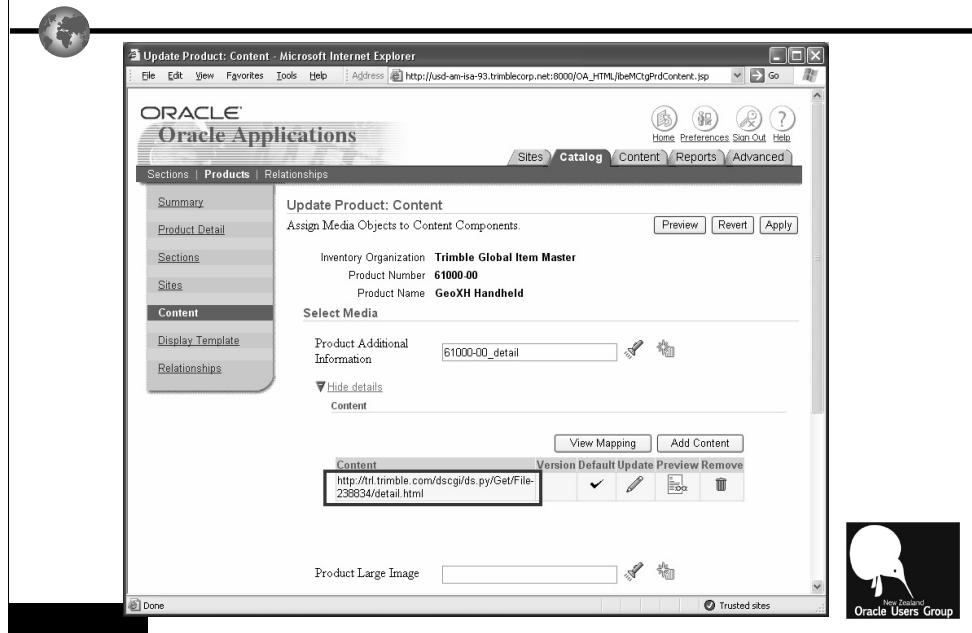
Add to Cart

Done store.trimble.com



Individual products in the store have associated content, including formatted text and images.

# Content Stored Outside Oracle



The link between content and a product is made in the Admin UI.

Trimble has most of its content served up by the DocuShare Content Management system.

DocuShare has the advantage of having a windows client integrated with the windows desktop for convenient content management.

## Customization - Tools



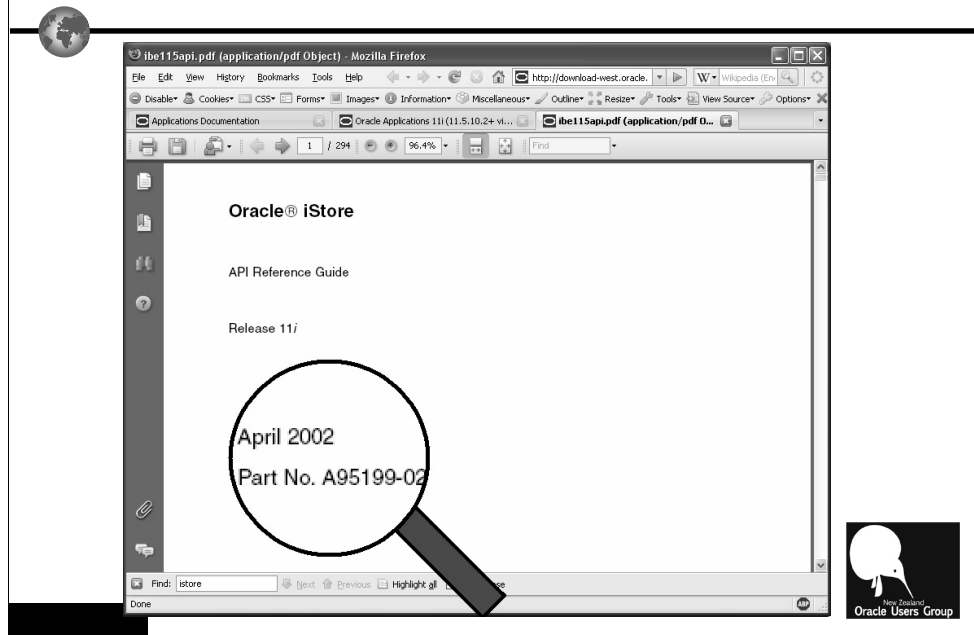
- **Oracle JDeveloper (JSP development)**
- **Oracle SQL Developer (ad-hoc SQL, packages)**
- **Metalink (Information & counseling)**
- **Visual Source Safe (Source Control)**
- **Sharepoint (Bug tracking)**
- **Wink (process screen captures)**



Customize when Oracle cannot be “configured” to do what is required

Requires getting hands dirty in the code, JSP, PLSQL and understanding of the underlying Oracle data model

# Current iStore JDeveloper Docs



Oracle customization documentation is limited

## Example Customization: CVV2



- **CVV2 stands for Credit Card Verification Value #2**
- **Hacker brute forcing our credit card order entry**
- **No CVV2 entry in iStore! (before release 12)**
- **Motivated by being out of pocket...**





## Research, research



- **UI only a small part of the problem**
- **iPayment supports CVV2**
- **Can we bridge the gap between iStore and iPayment?**



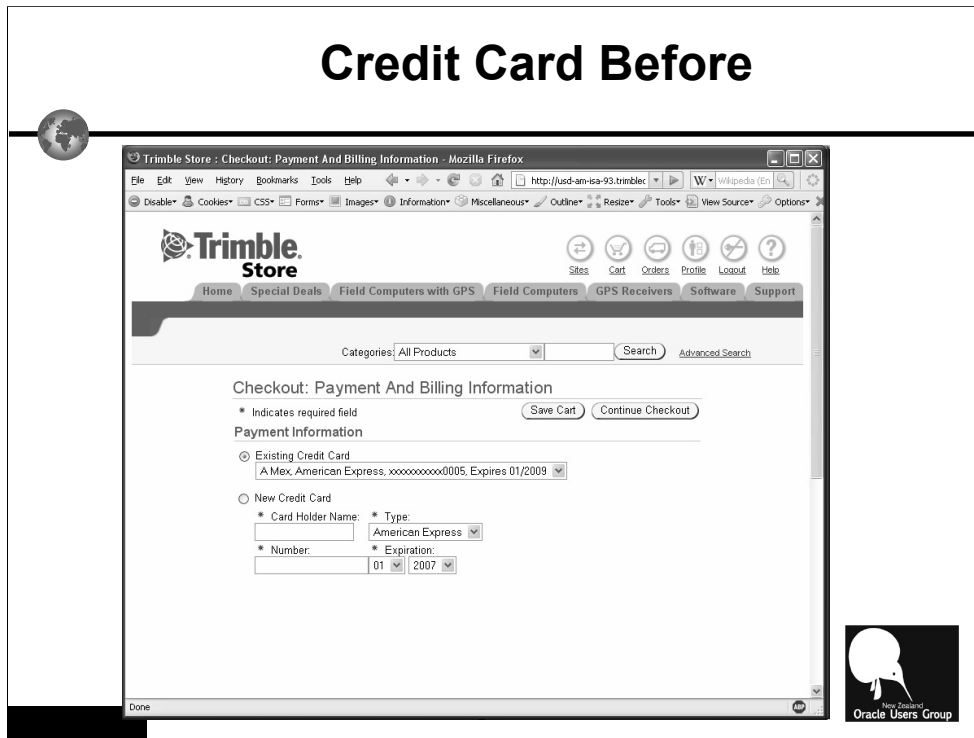
## CVV2 Solution



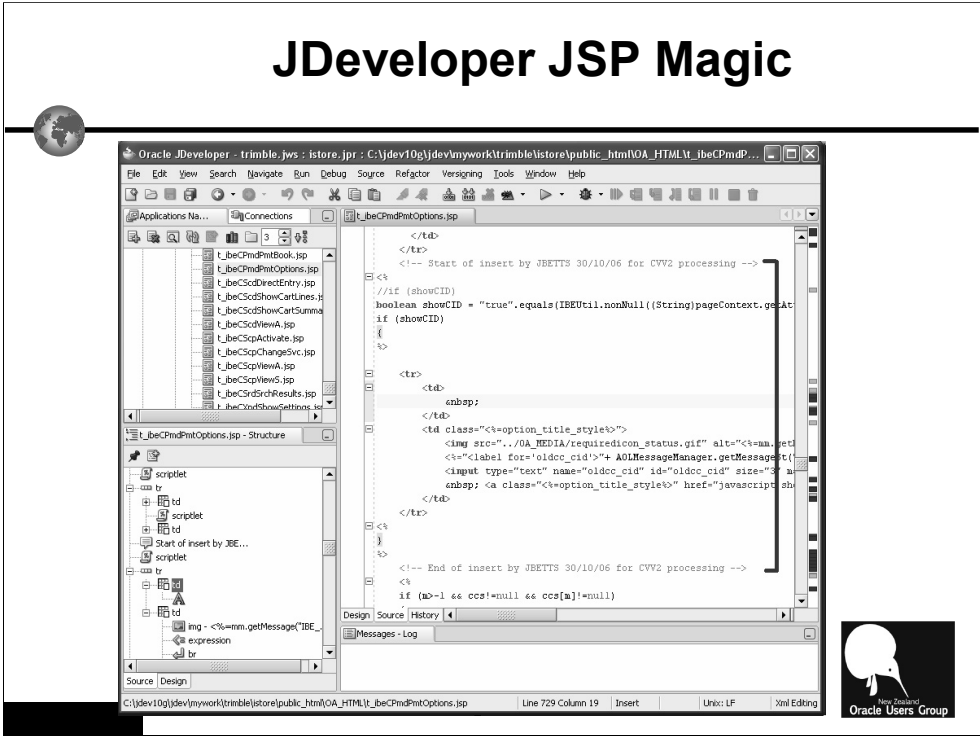
- **Create our own table to pass CVV2**
- **Modify UI to ask for CVV2**
- **Don't persist CVV2 after the fact**
- **Modify iStore PLSQL to pull in CVV2 for the active cart**
- **iPayment does the rest**
  
- **Customized Oracle code will be overwritten during patching**



# Credit Card Before



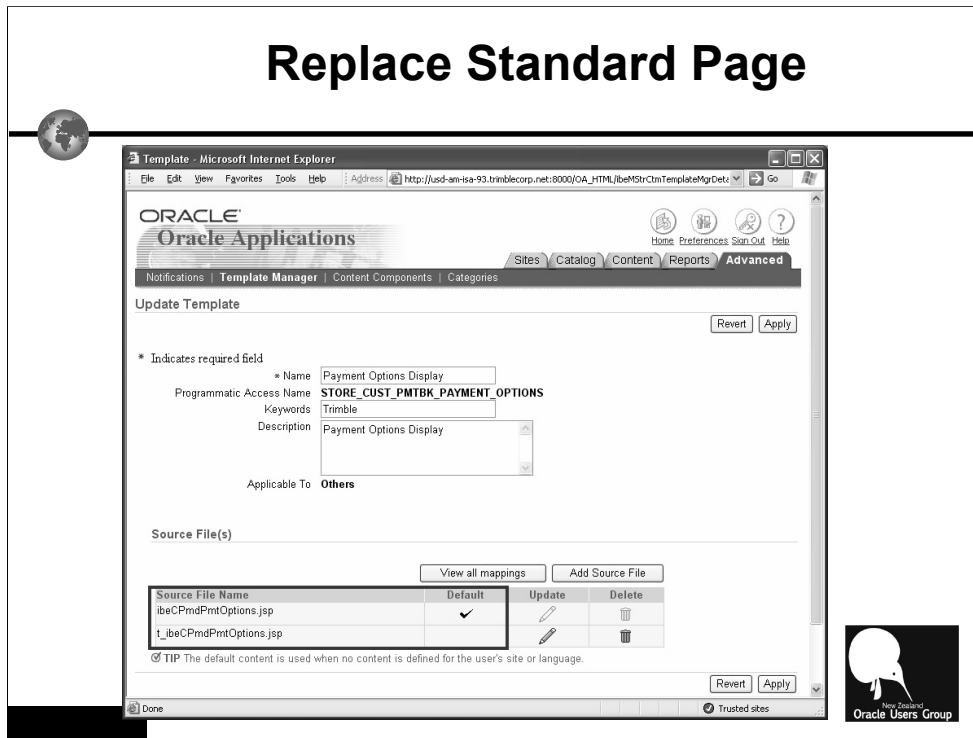
# JDeveloper JSP Magic



Under a hundred lines of code for the UI



# Replace Standard Page



In the admin UI under the advanced tab the Template Manager is used to replace parts of the iStore code on a store by store basis.

# Custom Credit Card CVV2



Trimble Store : Checkout: Payment And Billing Information - Mozilla Firefox

File Edit View History Bookmarks Tools Help http://usd-am-tsa-93.trimblec W Wkipedia (en)

Disable Cookies CSS Forms Images Information Miscellaneous Outline Resize Tools View Source Options

**Trimble Store** Sites Cart Orders Profile Logout Help

Home Special Deals Field Computers with GPS Field Computers GPS Receivers Software Support

Categories: All Products Search Advanced Search

### Checkout: Payment And Billing Information

\* Indicates required field

#### Payment Information

Existing Credit Card

A Mex, American Express, xxxxxxxxxxx0005, Expires 01/2009

\* 3 or 4 digit CID  [What is a CID?](#)


New Credit Card

\* Card Holder Name:  \* Type:

\* Number:  \* Expiration:  \* 3 or 4 digit CID  [What is a CID?](#)

In order to prevent unauthorized use of credit cards, we perform two additional checks before placing a credit card order. Firstly, the billing address for the order must match the street address and zip code to which the credit card statement is sent. Secondly, the CID number must match what is printed on the credit card.

Done



# Overall



- **Currently 80 iStore pages have been customized for the Trimble store**





# Q & A







**Thank You!**

