Case Study

How We Converted the Visa Rules Publication to MadCap Flare

PRESENTED BY

Peter Kelley

A BIT ABOUT ME

VISA

- I’m a Director in the Business Operations group within Client Services at Visa. I have 25 years of experience in the software industry managing various software applications.
- I’m what I like to refer to as a “hybrid,” which means I’m half business and half technical and I can translate between the two.

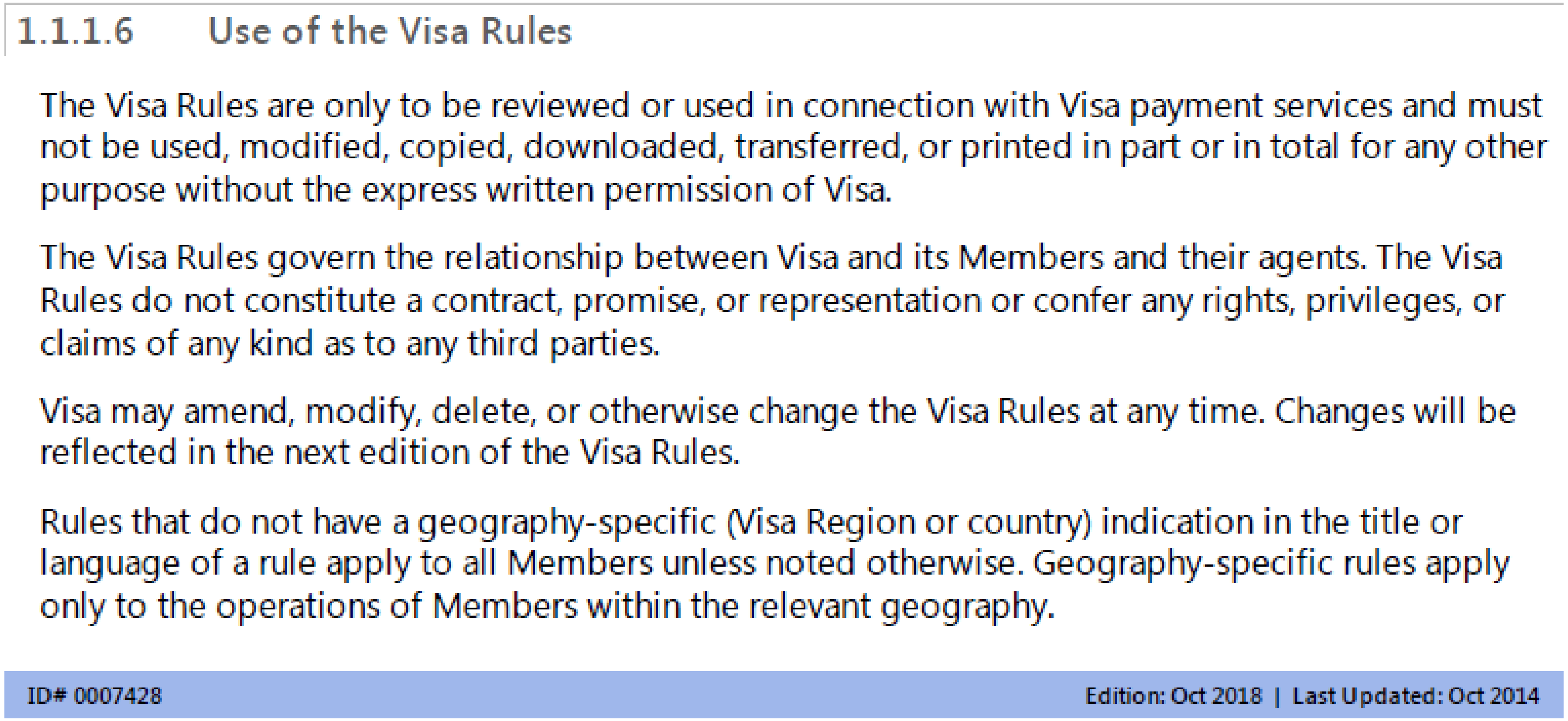
WHAT ARE THE VISA RULES?

- The Visa Rules govern the participation of our financial institution clients in the Visa system and are comprised of the Visa Core Rules and more specific Visa Product and Service Rules.
- The Visa Rules publication is produced twice annually with two versions, one for our clients and a redacted public version which can be found here:

  https://usa.visa.com/support/consumer/visa-rules.html

WHAT A RULE LOOKS LIKE

Here’s an example of what a Visa Rule looks like:



1.1.1.6 Use of the Visa Rules

The Visa Rules are only to be reviewed or used in connection with Visa payment services and must not be used, modified, copied, downloaded, transferred, or printed in part or in total for any other purpose without the express written permission of Visa.

The Visa Rules govern the relationship between Visa and its Members and their agents. The Visa Rules do not constitute a contract, promise, or representation or confer any rights, privileges, or claims of any kind as to any third parties.

Visa may amend, modify, delete, or otherwise change the Visa Rules at any time. Changes will be reflected in the next edition of the Visa Rules.

Rules that do not have a geography-specific (Visa Region or country) indication in the title or language of a rule apply to all Members unless noted otherwise. Geography-specific rules apply only to the operations of Members within the relevant geography.

ID# 0007428 **Edition: Oct 2018 | Last Updated: Oct 2014**

THE PROBLEM

- Our previous Visa Rules application was a custom built solution that did the job it was designed for pretty well, but there were some challenges:
    - It was built and maintained by a third party vendor and we wanted to eliminate that dependency
    - Every change required a custom development effort which was expensive and took a long time
    - It could only produce the Visa Rules, and there was a need to produce other publications from the same application
    - It was very time-consuming to maintain the 22 associated servers

THE CHALLENGE

- Convert our Visa Rules publication process from a custom XML-based software application to a more flexible product
- Retain the same format for our highly formatted 1,100+ page PDF output
- Make it easy to use for our 20+ content authors
- Reduce the cost and time to market for changes
- Easily allow for publishing of additional publications beyond the Visa Rules

HOW DID WE DECIDE TO USE FLARE?

- We considered several products we already had in-house.
- We also went through an RFP process, that’s how we found out about MadCap Flare!
- The other options either:
  - Didn’t meet our needs
  - Were not user friendly
  - Were just too expensive
- MadCap Flare met our needs, was easy enough to use, and was within our budget! So it was an easy choice.

WHAT HAPPENED NEXT?

- We licensed Flare and started planning
- We formed a project team comprised of 7 people:
  - 2 people on the business side, but with technical knowledge, this included myself
  - 2 people on the IT side, one of which was a Flare consultant that we brought on just for the project
  - 2 technical writers from our London office which had just undergone a similar Flare conversion effort and so they had a lot of experience in that area
  - 1 project manager just to keep us all on track

Planning

We held an offsite planning workshop where we came up with an overall schedule, made key decisions, assigned tasks, and determined a training approach.

KEY DECISIONS

- We would convert our existing XML based data to DITA so it could be imported into Flare
- Each Visa Rule would be its own Flare topic (almost 2,500 topics!)
- We would add our unique Rule IDs to the topic file names
- We would use a flat folder structure, but import our existing folder hierarchy to create our Master TOC
- “Heading topics” would then replace our TOC level folders and would be stored in a different folder within Flare

MORE KEY DECISIONS

- Key attributes would also be included as topic content for author visibility, but would be excluded from PDF output
- Cross reference formats were determined for topic to topic links and footnotes
- An auto-numbering strategy was devised to accommodate our existing four-level section numbers
- Potential formatting options for our “Rule ID Bars” and Glossary were proposed

Technical Execution

We took our plan and began to act on it, importing the data into Flare and building out the various components.

GETTING THE DATA INTO FLARE…

- Our software vendor wrote an export script from our custom application to extract our content and attributes into an XML format.
- Our IT lead then wrote a Python script to convert the XML data into a DITA format which we then imported into Flare.
- Importing to Flare from DITA worked much better than the imports we tried and had seen from Microsoft Word.
- The overall import from DITA was very clean, although we did encounter a few issues…

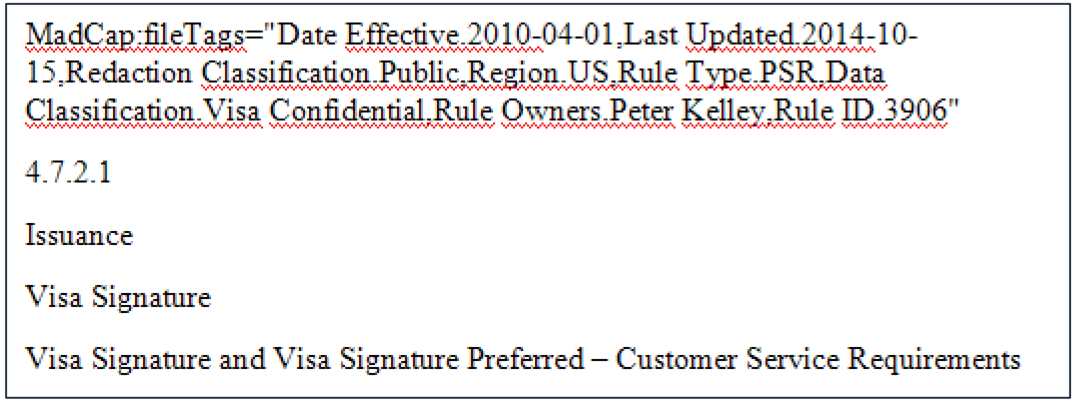
IMPORT CHALLENGES

- We used our existing rule and heading titles for our file names which were very long. We hit the Windows file path limit of 260 characters and so we had to truncate some of our file names and shorten our overall project folder structure.
- We had some duplicate heading titles and so Flare added numbers to the end of the duplicated file names. We accounted for this after the fact by renaming some topics and consolidating other topics, but in hindsight, it would have been better to make them unique first.
- While we got the data as clean as possible, we still had some post-import HTML reformatting work to do in Flare to apply styles and move things around. We used Flare’s Find and Replace for this.

Find and Replace

We utilized the “Find and Replace in Files” feature along with regular expressions to reformat the data which saved a lot of manual work

For example, making this:



MadCap:fileTags="Date Effective.2010-04-01,Last Updated.2014-10-15,Redaction Classification.Public,Region.US,Rule Type.PSR,Data Classification.Visa Confidential,Rule Owners.Peter Kelley,Rule ID.3906"

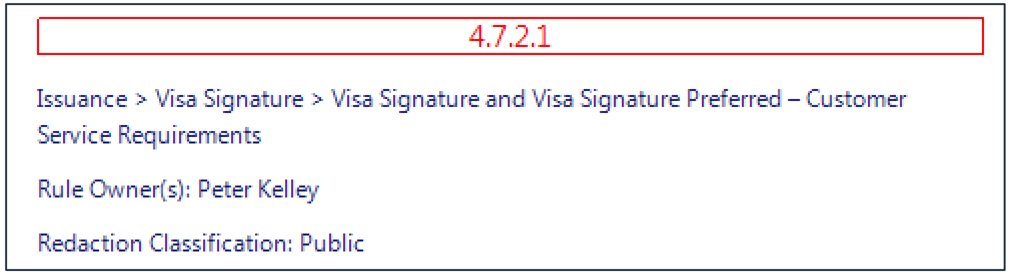
4.7.2.1

Issuance

Visa Signature

Visa Signature and Visa Signature Preferred – Customer Service Requirements

Look like this:



4.7.2.1

Issuance > Visa Signature > Visa Signature and Visa Signature Preferred – Customer Service Requirements

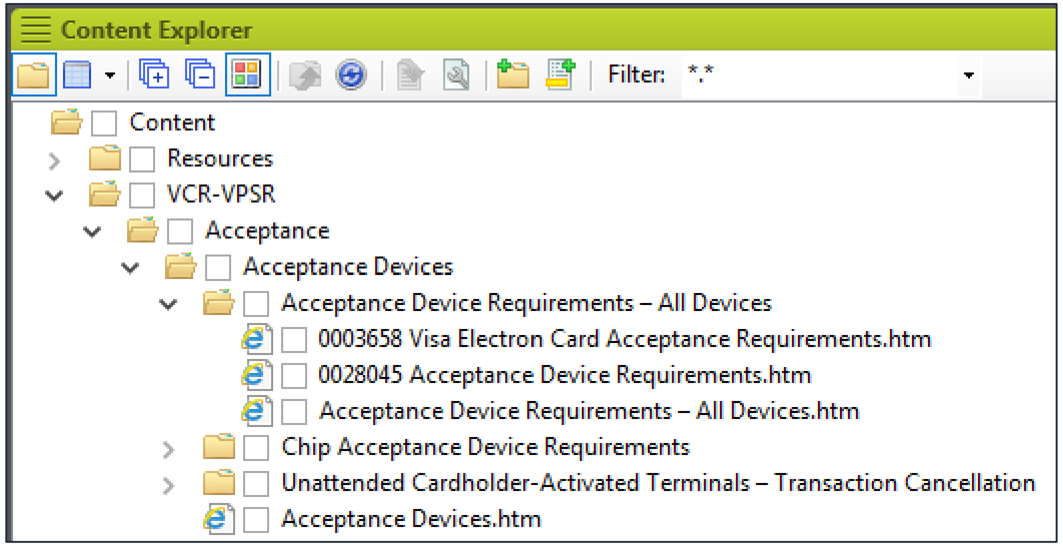
Rule Owner(s): Peter Kelley

Redaction Classification: Public

Folder Structure

We imported our folder structure to create our Master TOC using the DITA map, then replaced the folders with <h1> only topics.

Starting with this:

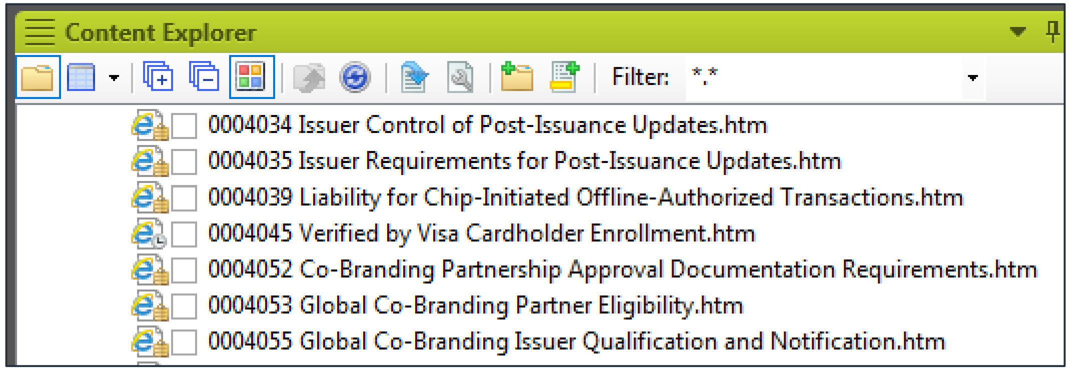


Content Explorer

Filter: *.*

- □ Content
  - □ Resources
  - □ VCR-VPSR
    - □ Acceptance
      - □ Acceptance Devices
        - □ Acceptance Device Requirements – All Devices
          - □ 0003658 Visa Electron Card Acceptance Requirements.htm
          - □ 0028045 Acceptance Device Requirements.htm
          - □ Acceptance Device Requirements – All Devices.htm
        - □ Chip Acceptance Device Requirements
        - □ Unattended Cardholder-Activated Terminals – Transaction Cancellation
        - □ Acceptance Devices.htm

And ending up with this:



Content Explorer

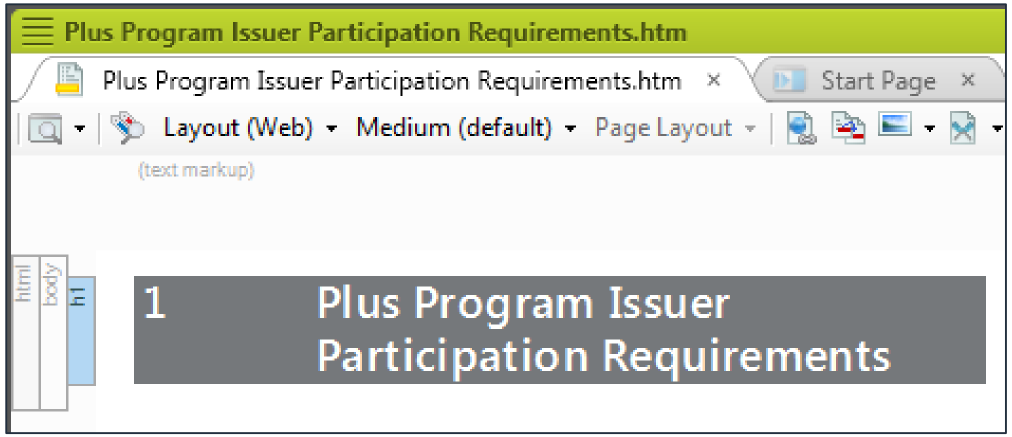
Filter: *.*

- □ 0004034 Issuer Control of Post-Issuance Updates.htm
- □ 0004035 Issuer Requirements for Post-Issuance Updates.htm
- □ 0004039 Liability for Chip-Initiated Offline-Authorized Transactions.htm
- □ 0004045 Verified by Visa Cardholder Enrollment.htm
- □ 0004052 Co-Branding Partnership Approval Documentation Requirements.htm
- □ 0004053 Global Co-Branding Partner Eligibility.htm
- □ 0004055 Global Co-Branding Issuer Qualification and Notification.htm

Heading Topics

We moved our empty <h1> topics to their own folder to more easily manage them. They are used only for grouping our rule content which is always at the same level.

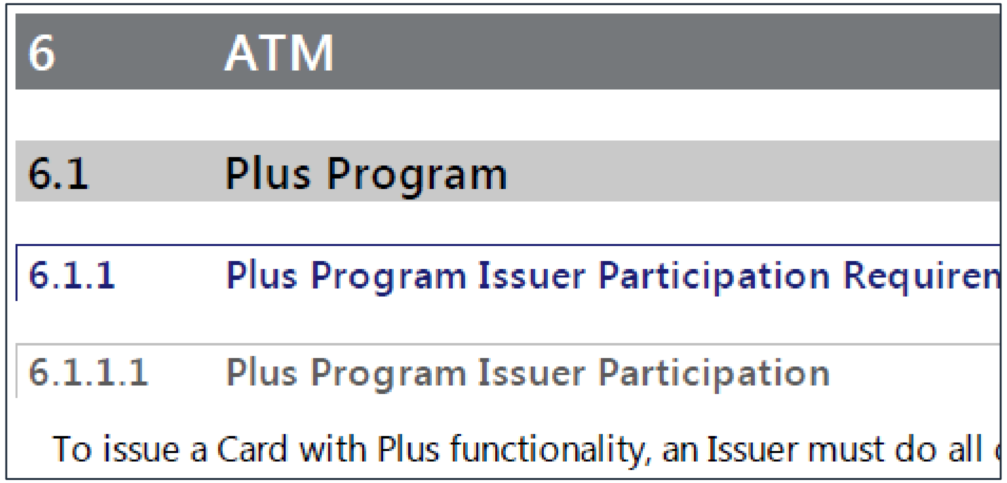
Heading Topic Example:



Plus Program Issuer Participation Requirements.htm
Plus Program Issuer Participation Requirements.htm ×
Start Page ×
Layout (Web)
Medium (default)
Page Layout
(text markup)
html
body
h1

1 Plus Program Issuer Participation Requirements

How they display in our PDF:



6 ATM

6.1 Plus Program

6.1.1 Plus Program Issuer Participation Requiren

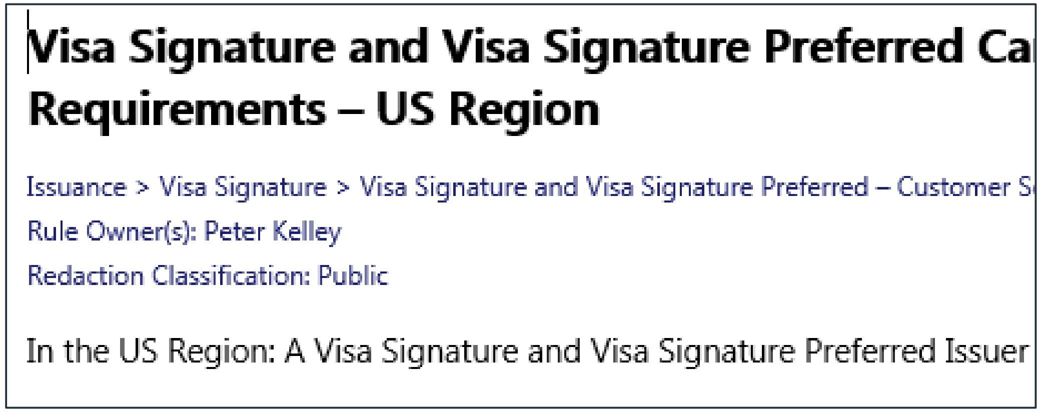
6.1.1.1 Plus Program Issuer Participation

To issue a Card with Plus functionality, an Issuer must do all

Key Attributes

We display key pieces of metadata in our topics for author reference and review output, but exclude them from our final publication output.

Review Output (Word):



Visa Signature and Visa Signature Preferred Ca
Requirements – US Region

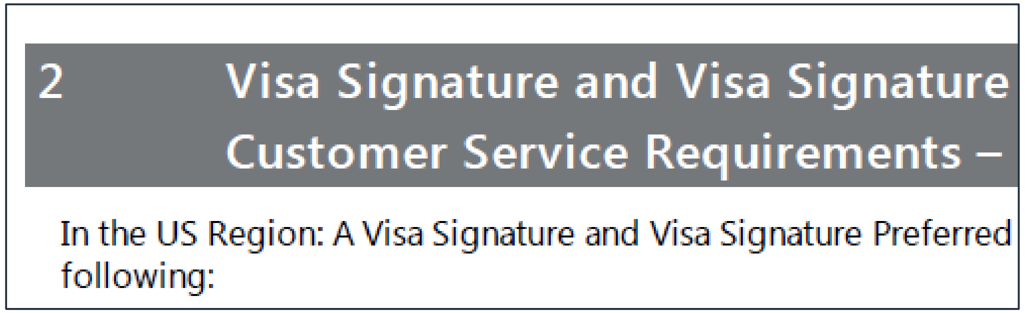
Issuance > Visa Signature > Visa Signature and Visa Signature Preferred – Customer S

Rule Owner(s): Peter Kelley

Redaction Classification: Public

In the US Region: A Visa Signature and Visa Signature Preferred Issuer

Publication Output (PDF):



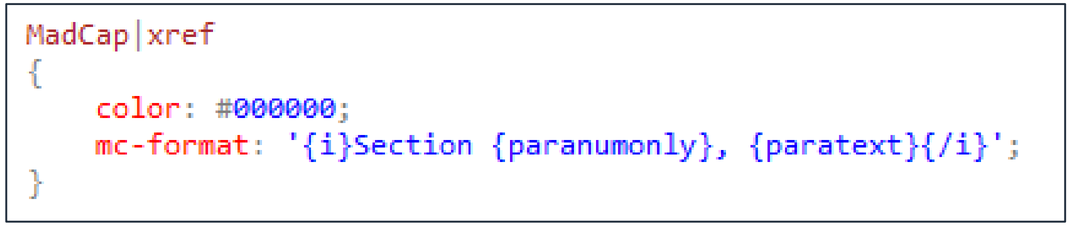
2 Visa Signature and Visa Signature
Customer Service Requirements –

In the US Region: A Visa Signature and Visa Signature Preferred
following:

Cross References

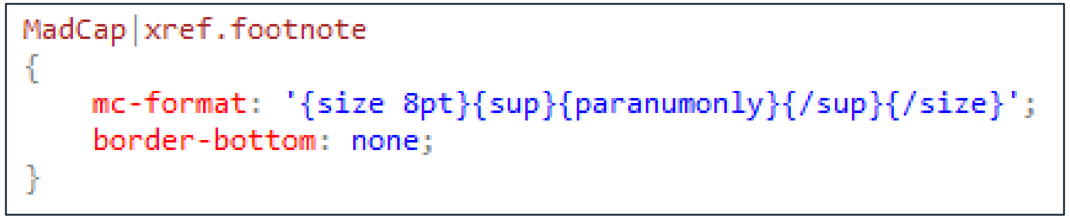
We came up with custom styles for our topic to topic links and for our footnotes. The multiple footnote cross ref automatically inserts a comma for us.

Topic to Topic Links:



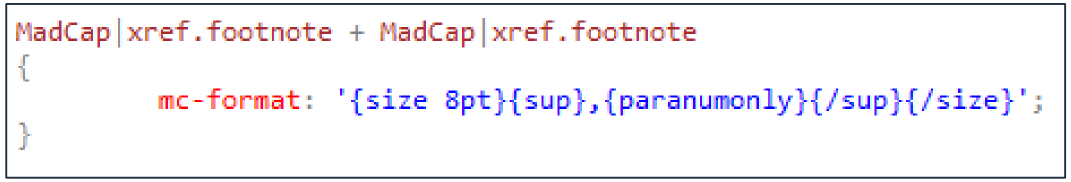
```
MadCap|xref
{
    color: #000000;
    mc-format: '{i}Section {paranumonly}, {paratext}{/i}';
}
```

Footnote (single):



```
MadCap|xref.footnote
{
    mc-format: '{size 8pt}{sup}{paranumonly}{/sup}{/size}';
    border-bottom: none;
}
```

Footnote (multiple):

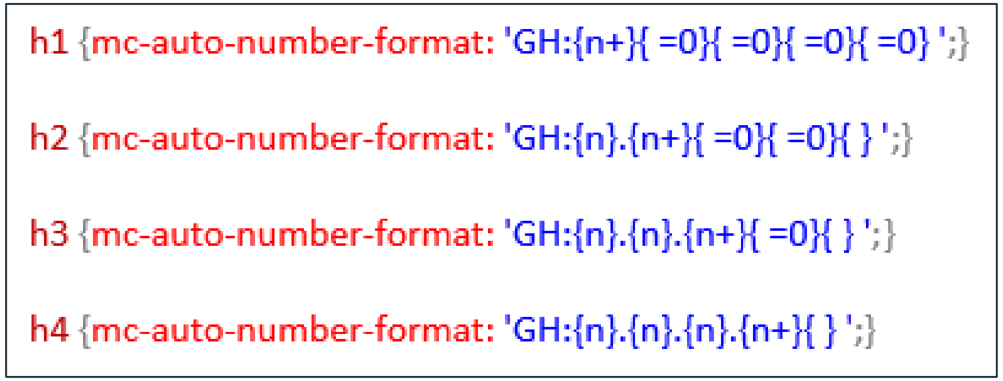


```
MadCap|xref.footnote + MadCap|xref.footnote
{
        mc-format: '{size 8pt}{sup},{paranumonly}{/sup}{/size}';
}
```

Section Numbers

Auto-numbering was used for our four-level section numbers, and also included a “NoNum” class and a “redaction” class for our Public version.

Our Auto-numbering:



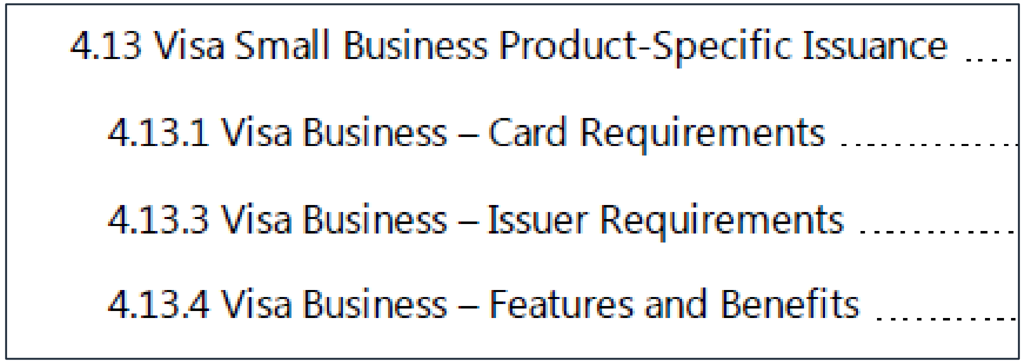
```
h1 {mc-auto-number-format: 'GH:{n+}{ =0}{ =0}{ =0}{ =0} ';}

h2 {mc-auto-number-format: 'GH:{n}.{n+}{ =0}{ =0}{ } ';}

h3 {mc-auto-number-format: 'GH:{n}.{n}.{n+}{ =0}{ } ';}

h4 {mc-auto-number-format: 'GH:{n}.{n}.{n}.{n+}{ } ';}
```

Redaction class example, skipping 4.13.2:



4.13 Visa Small Business Product-Specific Issuance ....

4.13.1 Visa Business – Card Requirements ....

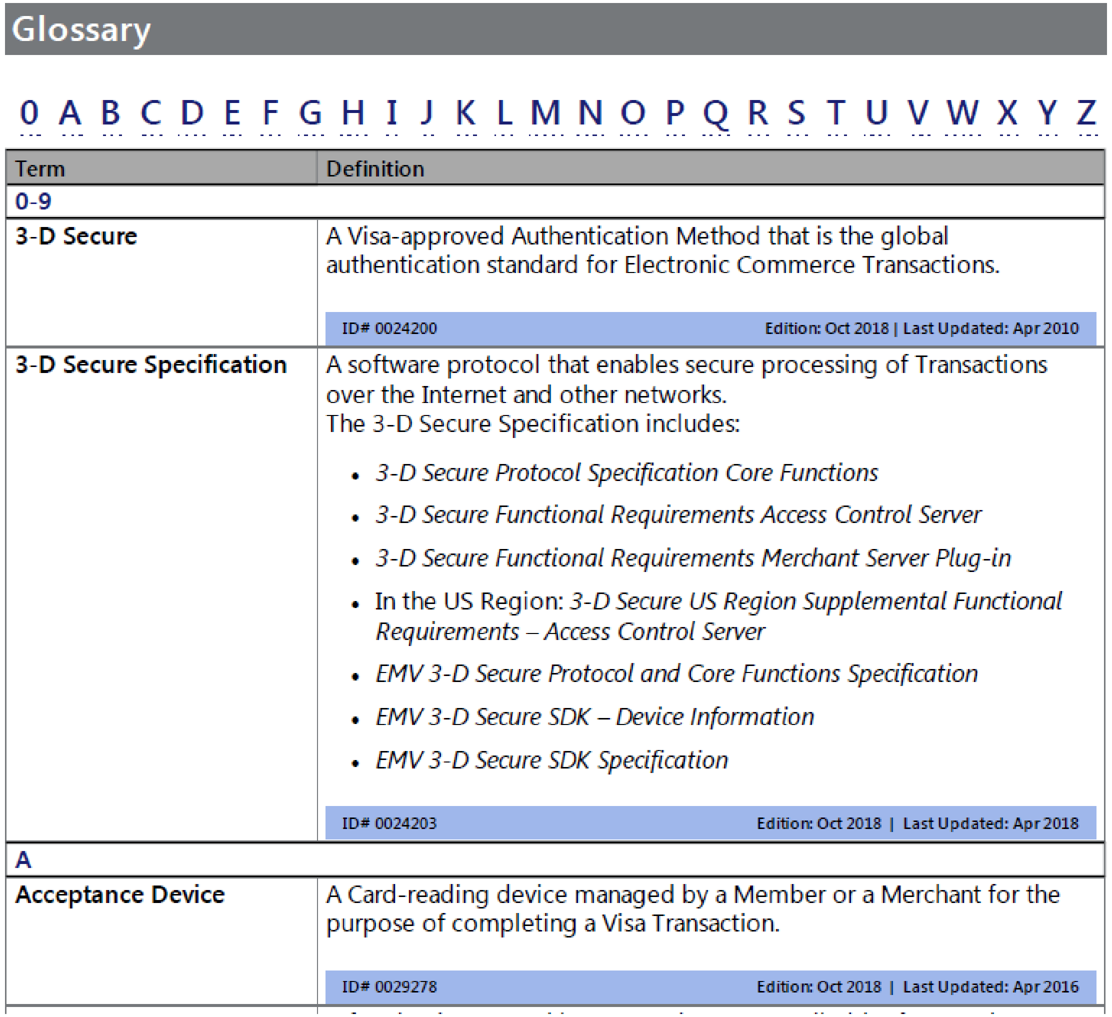
4.13.3 Visa Business – Issuer Requirements ....

4.13.4 Visa Business – Features and Benefits ....

Glossary & Rule ID Bars

Our glossary and Rule ID Bars needed special formatting which we achieved through Table styles.

Glossary & Rule ID Bars:



Glossary

0 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Term	Definition
0-9	
3-D Secure	A Visa-approved Authentication Method that is the global authentication standard for Electronic Commerce Transactions. ID# 0024200 Edition: Oct 2018 | Last Updated: Apr 2010
3-D Secure Specification	A software protocol that enables secure processing of Transactions over the Internet and other networks. The 3-D Secure Specification includes: • *3-D Secure Protocol Specification Core Functions* • *3-D Secure Functional Requirements Access Control Server* • *3-D Secure Functional Requirements Merchant Server Plug-in* • In the US Region: *3-D Secure US Region Supplemental Functional Requirements – Access Control Server* • *EMV 3-D Secure Protocol and Core Functions Specification* • *EMV 3-D Secure SDK – Device Information* • *EMV 3-D Secure SDK Specification* ID# 0024203 Edition: Oct 2018 | Last Updated: Apr 2018
A	
Acceptance Device	A Card-reading device managed by a Member or a Merchant for the purpose of completing a Visa Transaction. ID# 0029278 Edition: Oct 2018 | Last Updated: Apr 2016

Our Authoring Process

We needed to replicate our “proposal” based authoring process, both for internal review purposes and to maintain an audit trail of all Rule changes.

WHAT IS A PROPOSAL?

- A proposal is a set of rule changes being made for a specific business purpose.
- It can include changes to existing rules, addition of new rules, and deletion of rules that are no longer applicable.
- We use a separate TOC for each proposal as multiple people across our global team often include the same rules in different proposals for different business purposes.
- When the author is ready, the proposal is sent out for internal review.

HOW DID WE DO THIS IN FLARE?

- We use the Track Changes feature to show the changes to the Rule language (each Rule is a topic in Flare).
- We use a Word target to export the Rules proposal with it’s tracked changes for reviews.
- The author can then reject the changes made by other authors for other projects before sending it out for review.
- Once the proposal is approved, the topic changes are then accepted by a single person for all proposals who also ensures that what was approved matches what is in Flare.

KEY BENEFITS TO THIS APPROACH

- Our proposal-based process allows our 20+ rule authors globally to easily work on changes to the same rule at the same time.
- Flare’s biggest benefit is seeing each other’s changes in real time in order to detect potential conflicts. You couldn’t do that in our old tool.
- Also, the changes for one proposal can be accepted while leaving changes for another proposal intact. You couldn’t do that in our old tool either.

Source Control

We use Microsoft Team Foundation Server (TFS) for our source control.

WHY AND HOW WE USE TFS

- We had an enterprise license in place for TFS already at Visa, and it was a no-cost option with an internal support team in place to help, so it was a no-brainer for us.
- Since we had many mass changes to make to the content, we waited until the Flare project was completely setup before connecting it to TFS.
- We have multiple TFS “environments” set up with copies of our live project so we can try things out without impacting our Production content.

Training

We conducted multiple training sessions in multiple geographies to accommodate our distributed global team

TRAINING WAS KEY TO USER ADOPTION

- People often dislike change, and our authors are no exception. They had to modify the way they work to use Flare and we wanted to make that a positive experience.
  - We flew the core project team around to do in person training sessions wherever possible to maximize buy-in from our authors.
  - We also held conference call training sessions for locations where there were only one or two authors.
  - We took detailed feedback and suggestions during the training as we wanted everyone’s voice to be heard and for them to feel like they were partners in the process of switching tools.

We’re using Flare! Now what?

We needed to tackle two more things, translations, and single-sourcing multiple publications

THE SINGLE SOURCE CHALLENGES

- We needed to produce a public version of our Rules from the same source which is a subset of our full Rules.
- We also wanted to single-source our translations, some of which were region-specific subsets of our full Rules content. We also wanted to set this up in such a way that as the need for other subset translations came up, the project was already set up to handle them.
- We also wanted to produce rule books for three of our other products which reused much of the same content.

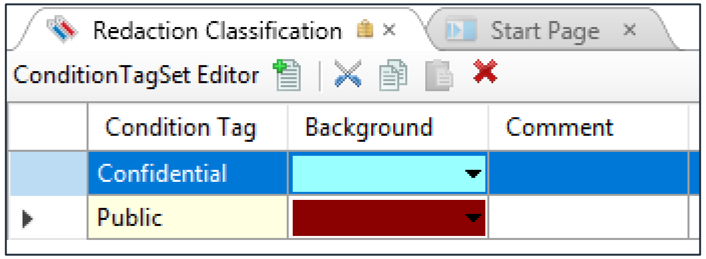
ADVANCED CONDITIONS TO THE RESCUE!

- Regular conditions worked at first when we did just our Public version and one other product, but this quickly became unworkable due to too many possibilities.
- We held a multi-day “conditioning summit” with the core business team and hashed through our options.
- In the end, Advanced Conditions offered the flexibility we needed. You have to be careful with them due to their complexity, but they offer nearly unlimited possibilities.

Our Conditions

We have conditions for our public versus confidential rules, each of our six regions, some of our countries, and each of our publications

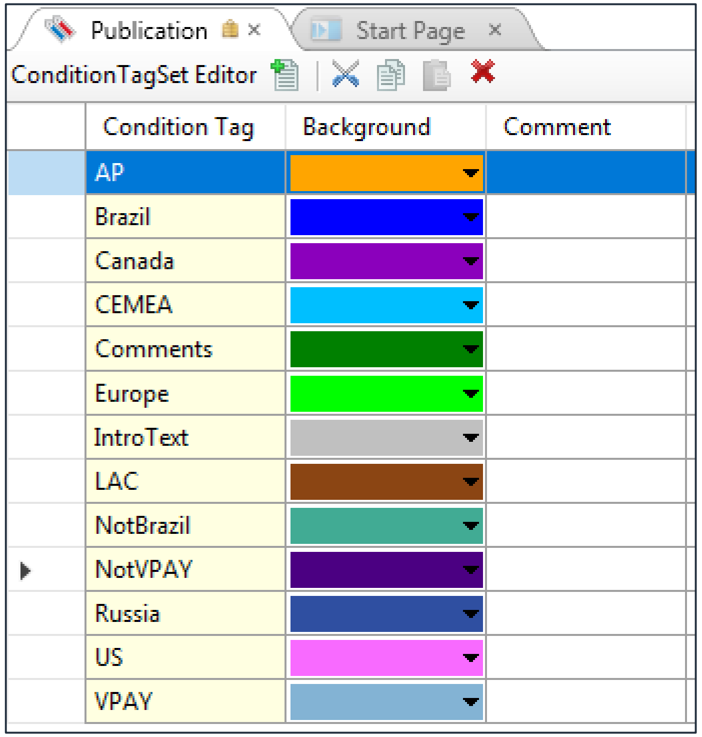
Public vs. Confidential:



ConditionTagSet Editor

	Condition Tag	Background	Comment
	Confidential	🟦	
▶	Public	🟥	

Publication Conditions:

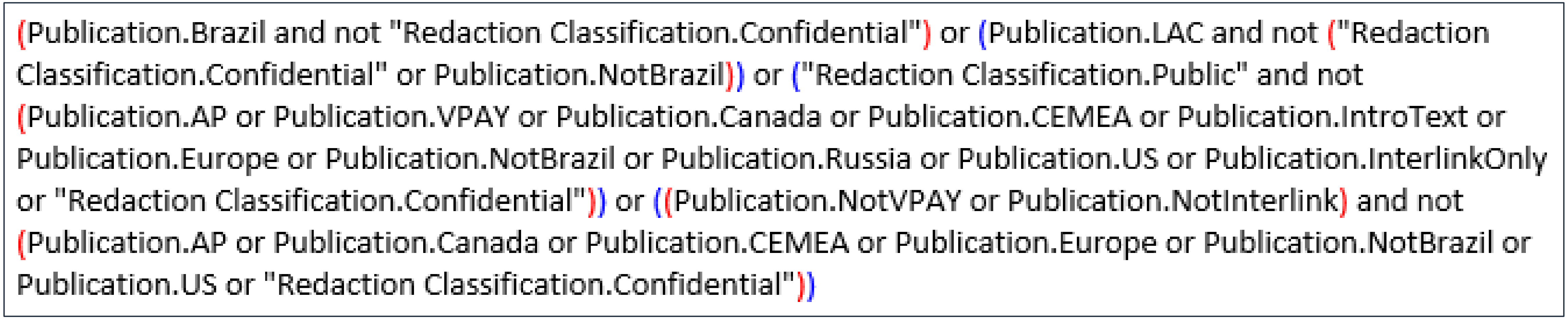


ConditionTagSet Editor

	Condition Tag	Background	Comment
	AP	🟧	
	Brazil	🟦	
	Canada	🟪	
	CEMEA	🟦	
	Comments	🟩	
	Europe	🟩	
	IntroText	⬜	
	LAC	🟫	
	NotBrazil	🟩	
▶	NotVPAY	🟪	
	Russia	🟦	
	US	🟪	
	VPAY	🟦	

ADVANCED CONDITIONS EXAMPLE

Here is an example from our Brazil translation that shows how complex our conditioning can get:



(Publication.Brazil and not "Redaction Classification.Confidential") or (Publication.LAC and not ("Redaction Classification.Confidential" or Publication.NotBrazil)) or ("Redaction Classification.Public" and not (Publication.AP or Publication.VPAY or Publication.Canada or Publication.CEMEA or Publication.IntroText or Publication.Europe or Publication.NotBrazil or Publication.Russia or Publication.US or Publication.InterlinkOnly or "Redaction Classification.Confidential")) or ((Publication.NotVPAY or Publication.NotInterlink) and not (Publication.AP or Publication.Canada or Publication.CEMEA or Publication.Europe or Publication.NotBrazil or Publication.US or "Redaction Classification.Confidential"))

A BIT ABOUT TRANSLATIONS

- We use Lingo for our translations, our translation vendor was familiar with the tool and it’s industry-standard XLIFF output format and welcomed the change.
- With Lingo and Flare, we can now produce our own translated PDFs that our vendor used to produce, which means we’re in full control when we make format changes.
- We don’t connect our Lingo project to TFS as the performance impacts were significant due to our unusually large number of topics (2,500+).

Some Flare Tips & Cool Features

I’d like to pass on some tips from what we learned along the way and show two of my favorite new Flare 2018 features.

SOME FLARE PROJECT TIPS

- Using a unique ID in your topic content and file names makes Find and Replace tasks and using the Quick Find more efficient, and also makes topic organization easier.
- Instead of deleting topics, move them to a separate Deleted Items folder if you need to keep an audit trail.
- If you have Targets that change their source TOC a lot, don’t check them in if that’s all you have changed, just undo the check-out to avoid creating unnecessary source control records.

FIND AND REPLACE TIPS

- Save your Find result set first to a csv file to keep a record of which topics you will be changing.
- If you use Find and Replace with source control, Flare checks out the impacted topics for you, and then you can review them for errors before checking them in and just undo the check-out if you made a mistake.

MY FAVORITE NEW FLARE FEATURES

- Our authors spend a lot of time researching what rules (topics) need to go into their proposals (TOCs) and they use the “Find and Replace in Files” for this.
- Now you can limit search results to the first result per topic.
- Even better, now you can drag multiple topics all at once from the search results to a TOC! You used to have to open each topic, use the Locate in Explorer feature on it, and then drag it into your TOC one at a time.

Concluding Thoughts

These are some key observations about why MadCap Flare was the right choice for us

WHAT I THINK A YEAR LATER

- Our annual software costs decreased by almost 90% even with the cost of yearly Platinum Maintenance renewal.
- As a business, we are in control of our own destiny. When we need to make changes to our process or our output, the work can now be done by non-developers.
- After getting used to the change, our writers generally have positive feedback about Flare. The similarity in the interface to Microsoft Word helped a lot with this as it has a familiar look and feel in many ways.

MY PARTING ADVICE

Always think outside of the box and keep poking around, you’ll figure it out!

Find and Replace Session

Tomorrow at 11, join me as I present an advanced session on using Flare’s “Find and Replace in Files” to it’s full potential.

Thank You!

Please feel free to contact me at pekelley@visa.com!

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