

# DocXpress White Paper

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## 1 Introduction

This document describes how a DocXpress template is marked-up using Microsoft Word® content controls.

Unlike most other authoring environments the dictionary (variables etc.) is not hidden behind a user-interface but is an explicit part of the document. This means that the dictionary can be edited just like editing any other document, utilising the full power of Microsoft Word. Furthermore, the printed version of the template contains everything needed for its understanding.

The markup is divided into three distinct parts according to the tags of the content controls:

- Author notes that play no part in the execution of the template, and which inform third-party readers
- Dictionary tables which define the structure and content of the questionnaire
- All other areas of the template which constitute the wording that will appear in the assembled documents

## 2 Features

The key features of a DocXpress template are:

- An explicit dictionary that is not hidden behind a user-interface
- The questionnaire form is simple, consisting of a list of sections with a list of questions for each individual section
- All aspects of the questionnaire can be made sensitive (dynamic) to the answers given
- Notification messages when certain answer combinations are detected
- How answers are collected is abstracted away from the questionnaire form itself
- First-class support for computations, literal values, custom functions, complex entities, and type-specific formatting
- Configuration in terms of questionnaire layout, color, localisation, and behavior can be baked into the template itself
- Repetition markup to an arbitrary depth
- Conditional markup to an arbitrary depth
- Punctuation of repeated and conditional spans
- Clause references that are converted into Microsoft Word cross-references
- Risk factor markup with support for the calculation of a total risk
- Attach portions of the template as separate documents

### 3 Microsoft Word® Content Controls

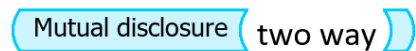
Microsoft Word content controls mark a document range with certain properties that can be interpreted by applications. Traditionally, these applications used the properties to collect data from the document reader and apply that data directly within the document.

When design mode<sup>1</sup> is enabled the content controls are visualized as a pair of “lozenges”, as in:



The text of the lozenge’s label is determined by the *Title* property of the content control, and its color is determined by its *Color* property. Importantly, there is also a non-visualized *Tag* property which DocXpress uses to distinguish between different types of markup and dictionary components.

Depending upon the range of the content control and the context in which it occurs the closing lozenge might not have a corresponding label, as in:



The permitted range of a content control is restricted by Microsoft Word. To test whether a content control range is permitted:

Select Developer on the Ribbon

Select a range

The range is permitted if the Controls are enabled.

---

<sup>1</sup> Design mode is enabled by installing the **Developer** tab on the Ribbon:

- File > Options > Customize Ribbon > Main Tabs > Developer > Add
- Developer Tab > Controls > Design Mode

## 4 Author Notes

All author note content controls are removed by the DocXpress run-time compiler and consequently will not appear in the assembled documents.

An author note is a content control having the *Tag* property:

AUTHORNOTE

### 4.1 AUTHORNOTE

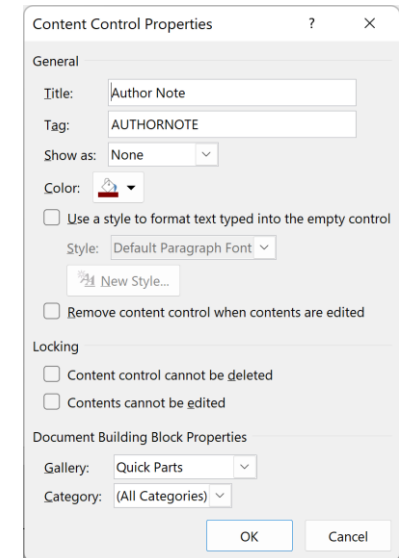
Author Note SUMMARY (NOT INCLUDED IN THE ASSEMBLED DOCUMENT)

Component	Description
<b>NON-DISCLOSURE AGREEMENT</b>	Contains the marked-up wording from which the resultant document will be assembled
FORM <sup>1</sup>	Define the sections and questions constituting the on-line form
NOTIFICATIONS <sup>1</sup>	Define the circumstances whereby notifications appear
VARIABLES <sup>2</sup>	Define the variables that relate the wording to the form
COMPUTATIONS <sup>3</sup>	Define computations over those variables from which values are derived
LITERALS <sup>4</sup>	Define literal values that will appear on the form and/or govern its behaviour
FORMATS	Define custom formats for dates, currencies, etc.
CONFIGURATION	Configure the baked-in behavior of the on-line form

Color coding is used to assist the reader and has no interpretation.

- <sup>1</sup> Gray denotes text that will appear on the form                      e.g. This section deals with the parties that will be disclosing information
- <sup>2</sup> Blue denotes the name of a variable                                      e.g. OtherPartyName
- <sup>3</sup> Green denotes the name of a computation                              e.g. AllOtherPartyNames
- <sup>4</sup> Purple denotes the name of a literal value                              e.g. DisclosureOptions
- <sup>5</sup> Red denotes built-in operators, functions and structures              e.g. multipick

Author Note



## 5 The Dictionary

All dictionary content controls, once they have been processed, are removed by the DocXpress run-time compiler and consequently will not appear in the assembled documents.

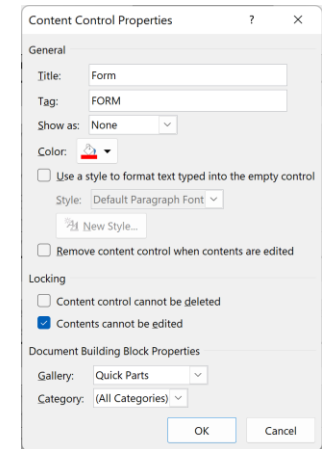
A dictionary content control has one of the following *Tag* properties:

FORM	the questionnaire form
NOTIFICATIONS	notification messages that can be activated to inform the user
VARIABLES	data variables
COMPUTATIONS	computations over the data variables
LITERALS	literal values
ENTITIES	complex entities with numerous properties
ARTEFACTS	static entity instances baked into the template
FORMATS	formats that can be applied to values
SEARCHABLES	tables that can be searched SQL-like
FUNCTIONS	custom Javascript or Lambda functions
CONFIGSKELETON	configuration of the questionnaire layout baked into the template
CONFIGCOLOR	configuration of questionnaire colors baked into the template
CONFIGLOCALE	configuration of localized texts baked into the template
CONFIGBEHAVIOR	configuration of the questionnaire behavior baked into the template

### 5.1 FORM

FORM

Section	Governor	Variable	Question	Guidance
Disclosure		Accepted	We are <u>not</u> a Law Firm. We are <u>not</u> offering you advice. We accept <u>no liabilities</u> for any use of this document.	If you do not accept this statement then the document will be blank.
		AgreementDate	Enter the date of this agreement.	This agreement cannot be backdated.
		DisclosingParties	Which parties will be disclosing information?	
ViaWeb Categories		ViaWebCategories	Select those categories for which information will be disclosed by ViaWeb.	This section deals with the categories of information that will be disclosed by ViaWeb.
	UpperIndex  by ViaWeb	ViaWebInfo	Enter a brief synopsis of the <b> LowerIndex </b> information that will be disclosed by ViaWeb.	This section outlines the <b> LowerIndex </b> information that will be disclosed by ViaWeb.
		ViaWebContact	Enter the name of the ViaWeb contact who will be revealing that information.	
Party  index  of  total  OtherPartyCount			The number of other parties	This section deals with the <b> IndexTh </b> other party.
		OtherPartyName	Please enter the name of the <b> IndexTh </b> other party:	
		OtherPartyAddress	Please enter the address of <b> OtherPartyName </b>:	

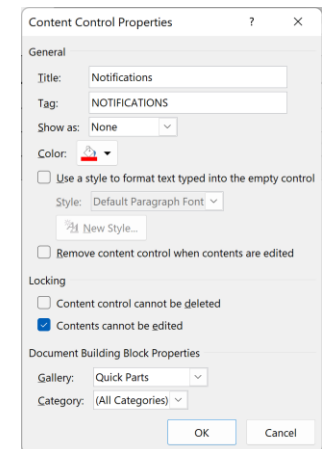


### 5.2 NOTIFICATIONS

NOTIFICATIONS

Activation	BlockAssembly	Notification
LotsOfOtherParties	false	OtherPartyCount  is a lot of other parties
Count( OtherPartyCategories ) > 2	false	That's a lot of categories for  OtherPartyName
NoOtherParties && TwoWay	true	It's unusual for ViaWeb to disclose information when there are no other parties
?AgreementDate && AgreementDate > MaxAgreementDate	true	AgreementDate  is too late!

Notifications





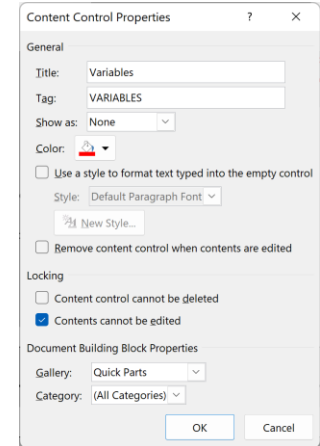
### 5.3 VARIABLES

- Input** Defines what type of answer is expected
- Mode** Defines how the answer will be entered
- Important** Indicates that the question is important
- Required** Requires an answer (true), otherwise the assembly is blocked
- Discrete** Repeated answers must be different (true), otherwise the assembly is blocked
- Allow Empty** An empty edit is treated as known (true) or as unknown (false)
- Options** The options presented to the user as either clickable buttons, radio buttons or checkboxes
- Unknown Option** When stated it is the label of an additional option that represents unknown
- Other Option** When stated it is the label of an additional option which presents an additional edit box
- Default** Initially populates an answer and potentially used in the assembled document
- Placeholder** The placeholder presented to the user when the edit box is empty
- Min** The (inclusive) minimum value that can be entered by the user
- Max** The (inclusive) maximum value that can be entered by the user

#### VARIABLES

- text, number, integer, boolean, date, time, pick, multipick
- line, multiline, password, passwordmatch, telephone, zipcode, email, url, range, radio, checkbox, dropdown, listbox, button, search, ordered
- Applicable to all input
- Applicable to all input
- Applicable to all input
- textline and textbox input
- boolean, pick, and multipick input
- pick and multipick input
- pick and multipick input
- Applicable to all input
- text, date, time, and number input
- date, time and number input
- date, time and number input

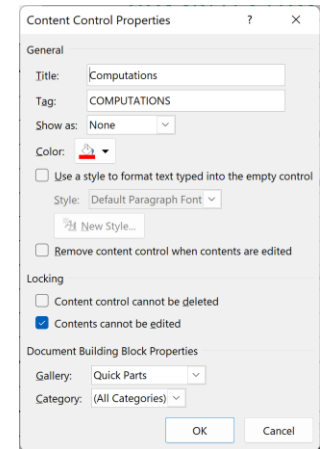
Name	Input	Mode	Important	Required	Discrete	Allow Empty	Options	Unknown Option	Other Option	Add Option	Default	Placeholder	Min	Max	Note
Accepted	boolean	button	true	true			AcceptanceOptions								The document will be blank unless this is checked.
AgreementDate	date											today()			The agreement cannot be backdated.
DisclosingParties	pick						DisclosureOptions	UnknownP							Determines whether information is disclosed by Viaweb.
ViawebCategories	multipick						CategoryOptions	UnknownC							Only relevant if the disclosure is by all parties.



### 5.4 COMPUTATIONS

#### COMPUTATIONS

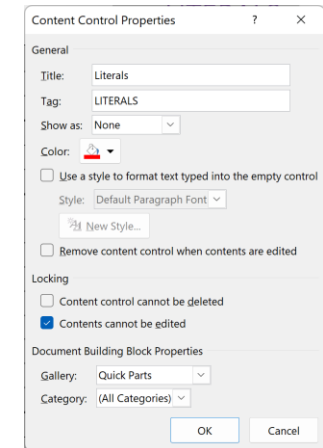
Name	Type	Computation	Member	Note
AcceptanceOptions	text[]		AcceptanceYesOption AcceptanceNoOption	The yes/no options for acceptance.
DisclosureOptions	text[]		AllParties OnlyOtherParties	The options in the disclosure pick list.
CategoryOptions	text[]		Security Technology Materials Sundry	The options in the categories multi-pick list.
CategoryDefaults	text[]		Technology Sundry Other1 Other2	The default options in the categories multi-pick list.
OneWay	boolean	DisclosingParties === OnlyOtherParties		Information will only be disclosed by the other parties.
TwoWay	boolean	DisclosingParties === AllParties		Information will be disclosed by all parties, including Viaweb.
OneOtherParty	boolean	OtherPartyCount === 1		There is one other party
NoOtherParties	boolean	OtherPartyCount === 0		There are 0 other parties
SomeOtherParties	boolean	OtherPartyCount > 0		There is at least 1 other party
ManyOtherParties	boolean	OtherPartyCount > 1		There are many other parties
LotsOfOtherParties	boolean	OtherPartyCount > 3		There are lots of other parties
CardinalOtherParties	text	cardinal( OtherPartyCount )		The number of other parties as a cardinal. e.g. "One", "Two", "Three", etc..



## 5.5 LITERALS

### LITERALS

Name	Type	Literal	Note
AcceptanceYesOption	text	I accept this statement	<i>The yes option</i>
AcceptanceNoOption	text	I do not accept	<i>The no option</i>
AllParties	text	All parties, including Viaweb	<i>Disclosure will be made by all parties, including Viaweb</i>
OnlyOtherParties	text	Only the other parties	<i>Disclosure will be made only by the other parties</i>
UnknownP	text	I'm not sure	<i>The disclosing parties is unknown</i>
Security	text	Security & Safekeeping	<i>An option in the categories pick list.</i>
Technology	text	Technology & Expertise	<i>An option in the categories pick list.</i>
Materials	text	Materials & Resources	<i>An option in the categories pick list.</i>
Sundry	text	Sundry	<i>An option in the categories pick list.</i>
Other1	text	Other One	<i>An other option in the categories pick list.</i>
Other2	text	Other Two	<i>An other option in the categories pick list.</i>
UnknownC	text	I don't know which categories	<i>The option when the categories are unknown.</i>
OtherC	text	Enter any additional categories	<i>The option for entering any additional categories.</i>
AnotherC	text	Add another category	<i>The button to add another option.</i>
OurInfo	text	As little as possible	<i>The default information provided by Viaweb</i>
YourInfo	text	As much as possible	<i>The default information provided by the other party</i>
YourName1	text	Alpha Corp	<i>The default name of the 1st other party</i>
YourName2	text	Beta Software	<i>The default name of the 2nd other party</i>
YourName3	text	Gamma Radios	<i>The default name of the 3rd other party</i>
YourAddress1	text	Union Plaza Uttoxeter	<i>The default address of the 1st other party</i>



## 5.6 ENTITIES

### ENTITIES

The **Article**, **Singular** and **Plural** properties contribute to how entities are shown on the form. For example:

Choose an **Address**; choose a **Company**; choose from a collection of existing **Companies**

The **Synopsis** property determines how entities are represented<sup>12</sup> when they appear in a pick list, and may be used within the wording<sup>1</sup>. For example:

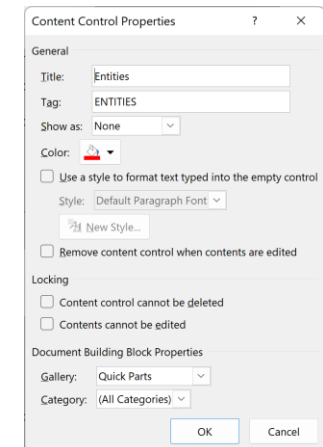
**BestCompany.Synopsis** Alpha Holdings of Unit 1 Middleton Industrial Park, Middleton MD22  
**BestCompany.Director#1.Synopsis** Peter Parker aged 49

The **Portrayal** property determines how entities are represented when they appear as an answer, and may be used within the wording<sup>4</sup>. For example:

**BestCompany.Portrayal** Company: Alpha Holdings  
 Incorporation: 2020-06-04  
 Registered Address: Unit 1 Middleton Industrial Park, Middleton MD22  
 ...  
**BestCompany.RegisteredAddress.Portrayal** Unit 1 Middleton Industrial Park, Middleton MD22  
**BestCompany.Director#1.Portrayal** Peter Parker of 57 Station Drive, Middleton MD4  
**BestCompany.Director#1.HomeAddress.Portrayal** 57 Station Drive, Middleton MD4

Any number of **Portrayal** properties with differing suffixes can be defined and used in the wording<sup>5</sup>. For example:

**BestCompany.PortrayalShort** Company: Alpha Holdings  
 Registered Address: Postal code: MD22  
**BestCompany.PortrayalDirectors** Company: Alpha Holdings  
 Directors: Peter Parker, Julia Parker



## 5.7 ARTEFACTS

### Artefacts ARTEFACTS

Artefacts are static entities that are defined within the template and may be chosen (if allowed) and edited (if allowed) by the user. Artefacts may reference other artefacts

Artefact	Entity	Pickable	Name	Incorporation	RegisteredAddress	Secretary	Director	Director	Subsidiary
Alpha Holding	company	true	Alpha Holdings PLC	2001-1-1	Alpha Address 1	Mary	Peter	Julia	Alpha Construction
Alpha Construction	company	false	Alpha Construction Ltd	2001-1-1	Alpha Address 2	Mary	Kevin	Diane	
Beta Software	company	true	Beta Software	2002-2-2	Beta Address	Betty	Rebecca		
Gamma Group	company	true	Gamma Group	2003-3-3	Gamma Address 1	John	Lucy		Gamma Radios
Gamma Radios	company	false	Gammma Radios	2003-3-3	Gamma Address 2	John	Lucy		

Artefact	Entity	Title	Name	Age	Phone	HomeAddress
Mary	person	Mrs	Mary Parker	47	01234 567890	Mary Address
Peter	person	Mr	Peter Parker	49	01234 567890	Mary Address
Julia	person	Ms	Julia Parker	24	01234 098765	Julia Address
Kevin	person	Mr	Kevin Parker	46	01234 567891	Kevin Address
Diane	person	Dr	Diane Parker	46	01234 567891	Kevin Address
Betty	person	Mrs	Betty Lamb	31	04321 998877	Betty Address
Rebecca	person	Mrs	Rebecca Lamb	33	04321 998877	Betty Address
John	person	Prof	John Robinson	62	01423 660055	John Address
Lucy	person	Ms	Lucy Robinson	37	01423 550066	John Address

**Content Control Properties** ? X

General

Title:

Tag:

Show as:

Color:

Use a style to format text typed into the empty control

Style:

Remove content control when contents are edited

Locking

Content control cannot be deleted

Contents cannot be edited

Document Building Block Properties

Gallery:

Category:

## 5.8 FORMATS

### Formats FORMATS

Name	If	Date Format	Separator 1	Separator 2	Case	Example
Long Date	LocaleCode() == France	le [day-ordinal] de [month-name], [year-digits]			lowercase	le vingt-neuvième de février, 2020
Long Date	LocaleCode() == Spain	el [day-ordinal] de [month-name], [year-digits]			lowercase	el vigésimo noveno de febrero, 2020
Long Date	LocaleCode() == Germany	den [day-ordinal] [month-name], [year-digits]			lowercase	den 29. februar 2024
Long Date	LocaleCode() == UK	the [day-ordinal-suffix] of [month-name], [year-digits]			lowercase	the 29th of february, 2020
Long Date		[day-digits]-[month-name-abbrev]-[year-digits]				29-Feb-2020
Oxford Comma			#, #	#, and #		a, b, c, and d
Line Breaks			¶\n#			a b c d

**Content Control Properties** ? X

General

Title:

Tag:

Show as:

Color:

Use a style to format text typed into the empty control

Style:

Remove content control when contents are edited

Locking

Content control cannot be deleted

Contents cannot be edited

Document Building Block Properties

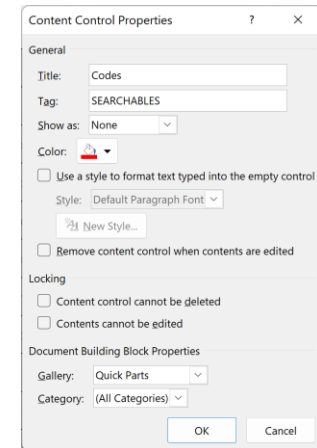
Gallery:

Category:

## 5.9 SEARCHABLES

**Codes** SEARCHABLE TABLE

Code	Kind	Name
<b>number</b>	<b>text</b>	<b>text</b>
1001	Occupation	Applications Programmer
1002	Occupation	Carer - Non Professional
1003	Occupation	Carer - Professional
1004	Occupation	Circus Proprietor
1005	Occupation	Computer Programmer
1006	Occupation	Crown Prosecutor
1007	Occupation	Data Processing Manager
1008	Occupation	Data Processor
1009	Occupation	Electrical Process Worker
1010	Occupation	Fast Food Proprietor
1011	Occupation	Film Producer
1012	Occupation	Fire Protection Consultant



## 5.10 FUNCTIONS

**Functions** CUSTOM FUNCTIONS

### Lambda Functions

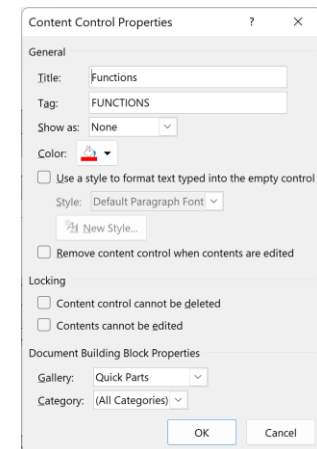
The definition of each function is a computation.

Name	Note	Parameters	Computation
OneWeekLater	One week after the specified date	date	AddDays( date, 7 )
OxfordComma	Apply the Oxford Comma format to a list of texts	list	Format( list, "Oxford Comma" )

### Javascript Functions

The definition of each function is a series of Javascript statements finishing with a return statement.

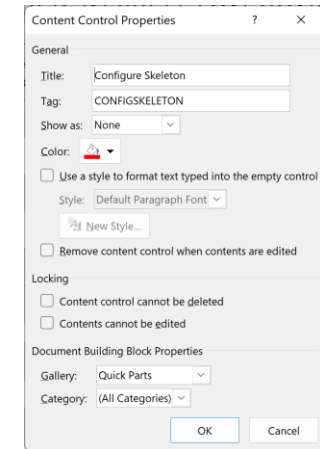
Name	Note	Parameters	Javascript
fv	the future value of an investment	r, n, c, pv, b	<pre> var rn = Math.pow( ( 1 + r ), n ) ; var rb = ( b ? r : 0 ) ; var fv = ( ( r &lt; 0.000001 ) ? - ( pv + ( c * n ) ) : - ( ( pv * rn ) + ( c * ( 1 + rb ) * ( rn - 1 ) / r ) ) ) ;  return fv ; </pre>
pv	the present value that is required for an investment to reach a future value	r, n, c, fv, b	<pre> var rn = Math.pow( ( 1 + r ), n ) ; var rb = ( b ? r : 0 ) ; var pv = ( ( r &lt; 0.000001 ) ? - ( fv + ( c * n ) ) : - ( ( c * ( 1 + rb ) * ( rn - 1 ) / r ) + fv ) / rn ) ;  return pv ; </pre>
npv	the number of periods required for an investment to grow from a	r, c, pv, fv, b	<pre> var rb = ( b ? r : 0 ) ; var n = ( ( r &lt; 0.000001 ) </pre>



### 5.11 CONFIGSKELETON

**Configure Skeleton** BAKED-IN SKELETON CONFIGURATION

Row	Column	Cell	Height	Height No Wording	Width	Width No Wording	Style	Note
single			100%					The only row containing the sections, questions, wording, and actions
left					50%	100%		The left column containing the sections, questions, and navigation actions
		SectionListDropdown	24px					Dropdown of sections
		QuestionList	calc( 100% - 72px )					The list of questions in the selected section
		PreviousQuestion NextQuestion	36px					Question navigation actions
right					calc( 50% - 12px )	0		The right column containing the wording and other actions
		Wording	calc( 100% - 48px )					The wording
		ResumeAnswers SaveAnswers	36px					The actions, other than the question navigation actions

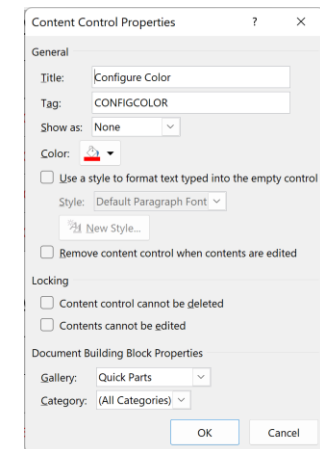


### 5.12 CONFIGCOLOR

**Configure Color** BAKED-IN COLOR CONFIGURATION

Color	Mode	Pencil	Canvas	Border	Note
Question	Base	#000000	#FFFFFF	#FFFFFF	The base color of a question
	Hover	#000000	#FFFFFF	#800080	The color of a question when the user hovers over it
	Selected	#5C00C8	#FFFFFF	#5C00C8	The color of the selected question
	Invalid	#000000	#FEBB2F	#FEBB2F	The color of a question with an invalid answer

**Configure Color**

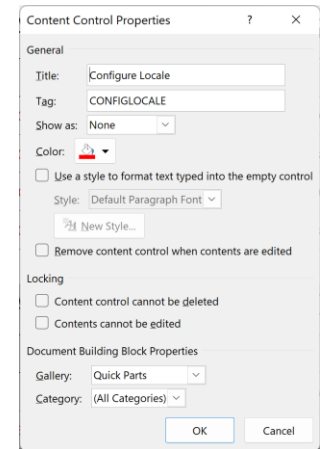


### 5.13 CONFIGLOCALE

[Configure Locale](#) BAKED-IN LOCALE CONFIGURATION

Context	Name	Text	Note
Answers	TelephonePattern	[0][0-9]{4} [0-9]{6}	Pattern for matching a valid telephone number (UK mobile)
	TelephoneExample	01234 567890	
	TelephonePlaceholder	0NNNN NNNNNN	
Validation	TelephoneMismatch	UK mobile numbers should take the form %2 (e.g. %3) where N is between 0 and 9!	Invalid telephone number

[Configure Locale](#)

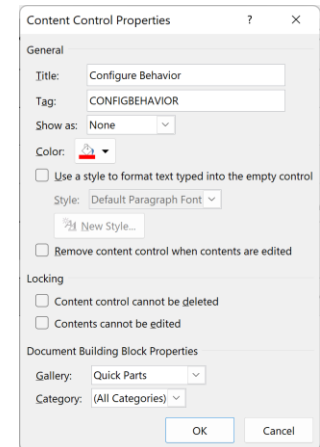


### 5.14 CONFIGBEHAVIOR

[Configure Behavior](#) BAKED-IN BEHAVIOR CONFIGURATION

Group	Setting	Value	Note
Questions	VisitInSequence	true	Questions must be answered in strict sequence when going forwards.
	LeaveOnlyWhenComplete	true	Questions must be answered before visiting the next question.
	CompleteOnlyWhenVisited	true	An answer is considered complete only when the question has been visited.
Answers	DefaultValueAsActualValue	true	Consider default values as actual values for the purpose of completeness and assembly.
Wording	Visible	true	The wording is initially visible

[Configure Behavior](#)



## 6 The Wording

Having removed all dictionary content controls and all author notes the DocXpress run-time compiler considers everything that remains as the template wording.

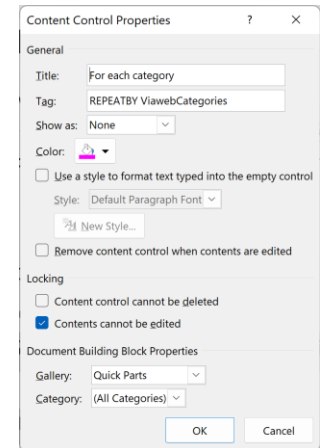
The content controls in the wording are identified by their *Tag* property having one of the following prefixes:

REPEATBY	the content is repeated zero or more times in the assembled document
IF	the content may or may not appear in the assembled document
VALUE	the content is replaced with some evaluated text
PUNCTUATION	defines how the enclosed wording is punctuated
PUNCTUATIONMARK	defines a point where the punctuation is inserted
CLAUSELABEL	identifies a (numbered) paragraph in the assembled document
CLAUSEREFERENCE	becomes a Microsoft Word cross-reference in the assembled document
RISKFIGURE	the content does not appear in the assembled document, but contributes towards the accumulated risk figures
RISKFACTOR	the content does not appear in the assembled document, but contributes towards the product of risk factors
ATTACH	the content is assembled as a separate document

Any other content control is ignored and may appear in the assembled document.

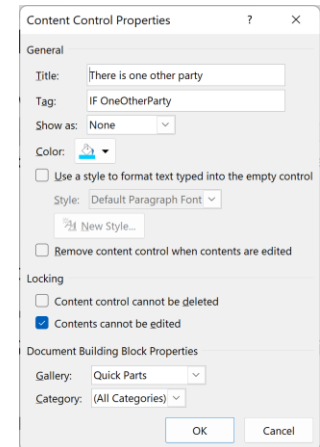
### 6.1 REPEATBY

« For each category (The Disclosure of (Category (e.g. Security & Safekeeping)) Information by Viaweb  
Information disclosed (e.g. Security is outsourced to Sentinel)  
This information will be provided by (Name of contact (e.g. Michael Collins)) For each category»



### 6.2 IF

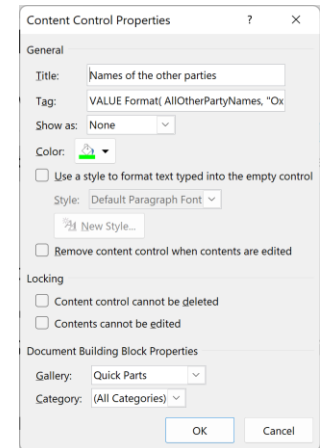
There is one other party (one other party whose name is)





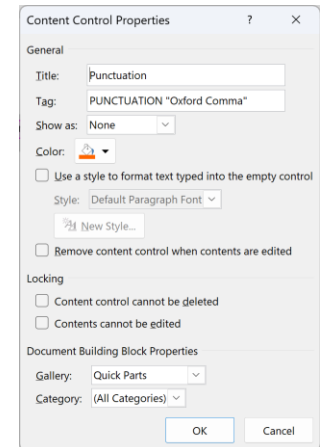
### 6.3 VALUE

Names of the other parties (e.g. Alpha Holdings PLC, Beta Construction Ltd, and Gamma Radios)

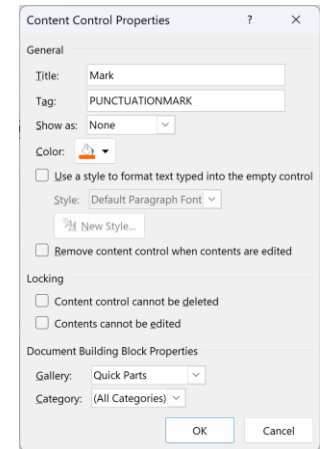


### 6.4 PUNCTUATION

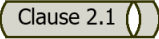
Punctuation (For each other party ... ) Mark (e.g. , and) Punctuation

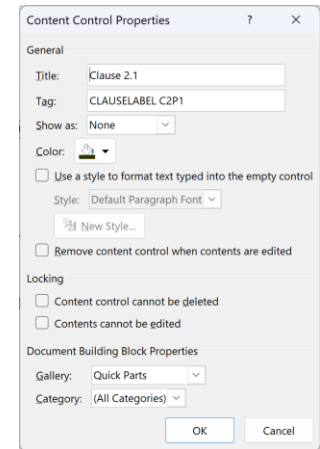


## 6.5 PUNCTUATION MARK



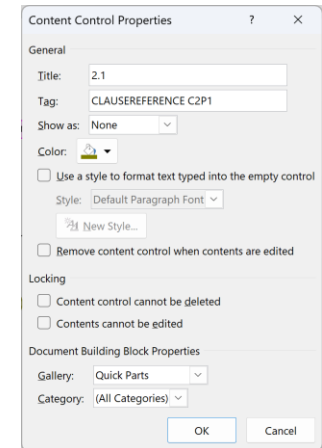
## 6.6 CLAUSE LABEL

- 1.
- 2.
- 2.1.  This is clause 2.1



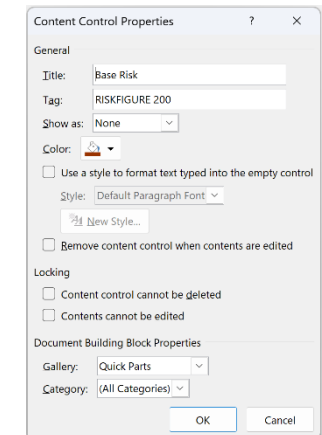
## 6.7 CLAUSE REFERENCE

Subject to clause 2.1



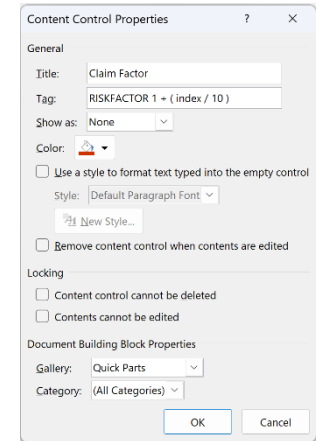
## 6.8 RISK FIGURE

Base Risk 200



## 6.9 RISK FACTOR

Claim Factor (1.1, 1.2, 1.3, etc.)



## 6.10 ATTACH

Attach letter to other party (

ATTACHMENT # Attachment Number E.G. 1)

To Name of the other party e.g. Alpha Holdings PLC)

The categories of information that you will be disclosing are:

Categories disclosed by the other party (e.g. Technology & Expertise  
Materials & Resources  
Secret Research & Development)

Attach letter to other party ->

