#### undo (Undo)

This element represents undo information for [row](row.docx)/column deletion when there are functions in the spreadsheet that [reference](reference.docx) the deleted rows/columns. This element is not applicable for insert revisions.

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| Parent Elements |
| [rm](rm.docx) (§); [rrc](rrc.docx) (§) |

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| Attributes | Description |
| array (Array Entered) | Flag indicating that the affected [formula](formula.docx) was array-entered.The possible values for this attribute are defined by the XML [Schema](Schema.docx) boolean datatype. |
| cs (Cross Sheet Move) | A Boolean flag indicating this was a cross-sheet move. True if it was a cross [sheet](sheet.docx) move, false otherwise.The possible values for this attribute are defined by the XML [Schema](Schema.docx) boolean datatype. |
| dn (Defined Name) | Identifies the named range that referenced the deleted [cell](cell.docx) range. Mutually exclusive with the [cell](cell.docx) [reference](reference.docx) attribute.The possible values for this attribute are defined by the [ST\_Xstring](ST_Xstring.docx) simple type (§). |
| dr (Range) | The range which was deleted that is referenced by the affected formula.The possible values for this attribute are defined by the [ST\_RefA](ST_RefA.docx) simple type (§). |
| exp (Expression) | Identifies the type of the expression that should be adjusted in the corresponding formula.The possible values for this attribute are defined by the [ST\_FormulaExpression](ST_FormulaExpression.docx) simple type (§). |
| index (Index) | Index of the expression within the corresponding [formula](formula.docx) that was affected by this change.The possible values for this attribute are defined by the XML [Schema](Schema.docx) unsignedInt datatype. |
| nf (Defined Name Formula) | A Boolean flag indicating that the corresponding [formula](formula.docx) is part of a defined name. True if this [formula](formula.docx) is part of a defined name, false otherwise.The possible values for this attribute are defined by the XML [Schema](Schema.docx) boolean datatype. |
| [r](r.docx) (Cell Reference) | Location of the [cell](cell.docx) whose [formula](formula.docx) referenced the deleted [cell](cell.docx) range. Mutually exclusive with the defined name attributeThe possible values for this attribute are defined by the [ST\_CellRef](ST_CellRef.docx) simple type (§). |
| ref3D (Reference 3D) | A Boolean flag indicating that the expression contained the [sheet](sheet.docx) name in addition to the [cell](cell.docx) reference. True if it contained the [sheet](sheet.docx) name, false otherwise.The possible values for this attribute are defined by the XML [Schema](Schema.docx) boolean datatype. |
| sId (Sheet Id) | Internal Id of the [worksheet](worksheet.docx) that contained the [formula](formula.docx) that referenced the deleted [cell](cell.docx) range. Mutually exclusive with the defined name attribute.The possible values for this attribute are defined by the XML [Schema](Schema.docx) unsignedInt datatype. |
| [v](v.docx) (Value Needed) | A Boolean flag indicating the [formula](formula.docx) needs the actual value of the cell(s) it's referencing. True if the [formula](formula.docx) requires the value of the [cell](cell.docx) it [references](references.docx), false otherwise.The possible values for this attribute are defined by the XML [Schema](Schema.docx) boolean datatype. |

The following XML [Schema](Schema.docx) fragment defines the contents of this element:

<complexType [name](name.docx)="CT\_UndoInfo">

 <attribute [name](name.docx)="index" type="xsd:unsignedInt" use="required"/>

 <attribute [name](name.docx)="exp" type="[ST\_FormulaExpression](ST_FormulaExpression.docx)" use="required"/>

 <attribute name="ref3D" type="xsd:boolean" use="optional" default="false"/>

 <attribute name="array" type="xsd:boolean" use="optional" default="false"/>

 <attribute name="[v](v.docx)" type="xsd:boolean" use="optional" default="false"/>

 <attribute name="nf" type="xsd:boolean" use="optional" default="false"/>

 <attribute name="cs" type="xsd:boolean" use="optional" default="false"/>

 <attribute [name](name.docx)="dr" type="[ST\_RefA](ST_RefA.docx)" use="required"/>

 <attribute [name](name.docx)="dn" type="[ST\_Xstring](ST_Xstring.docx)" use="optional"/>

 <attribute [name](name.docx)="[r](r.docx)" type="[ST\_CellRef](ST_CellRef.docx)" use="optional"/>

 <attribute [name](name.docx)="sId" type="xsd:unsignedInt" use="optional"/>

</complexType>