Band Editor Function Guide
Version 1.1
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*We encourage you to inform us of any errors you may find in this guide, and we ask that you please forward suggestions that will make this document more relevant/understandable to those that will follow. We listen to our users to always try to improve our literature and products. Welcome to **Argos**! Enjoy!*

1 – Introduction

This document is intended for the **Argos** users who have the authority to create reports; i.e. developers and power end users. Functions are added to banded reports (through expressions) to manipulate the data returned in the initial query to make a report more useful for the users. Expressions are used for calculating numerical values, strings or logical values ("true" or "false"). You can do operations with DataFields, for example calculate the tax for a given amount, or merge two DataFields into one string. In the Band Editor there are built in functions varying from determining the square root of a number to formatting of text fields. The many

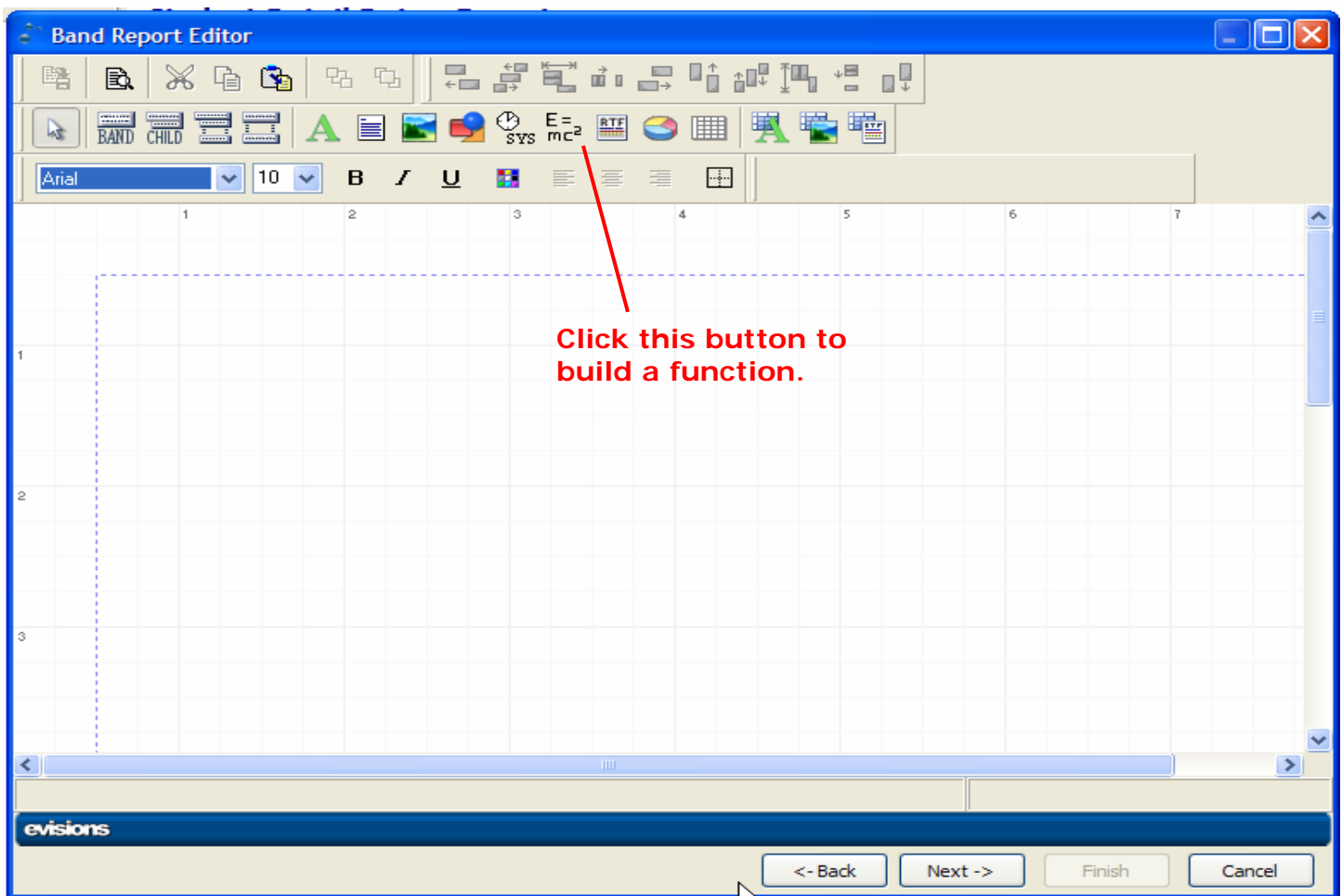different functions can be used by clicking the "Add an Expression" button. $E = mc^2$

Fig. 1.1 – The Expression Button

Building an Expression

When you click the "Add an expression" button, the Expression field dialog box will open. Here you will be able to build your expression as well as change some of the attributes of it.
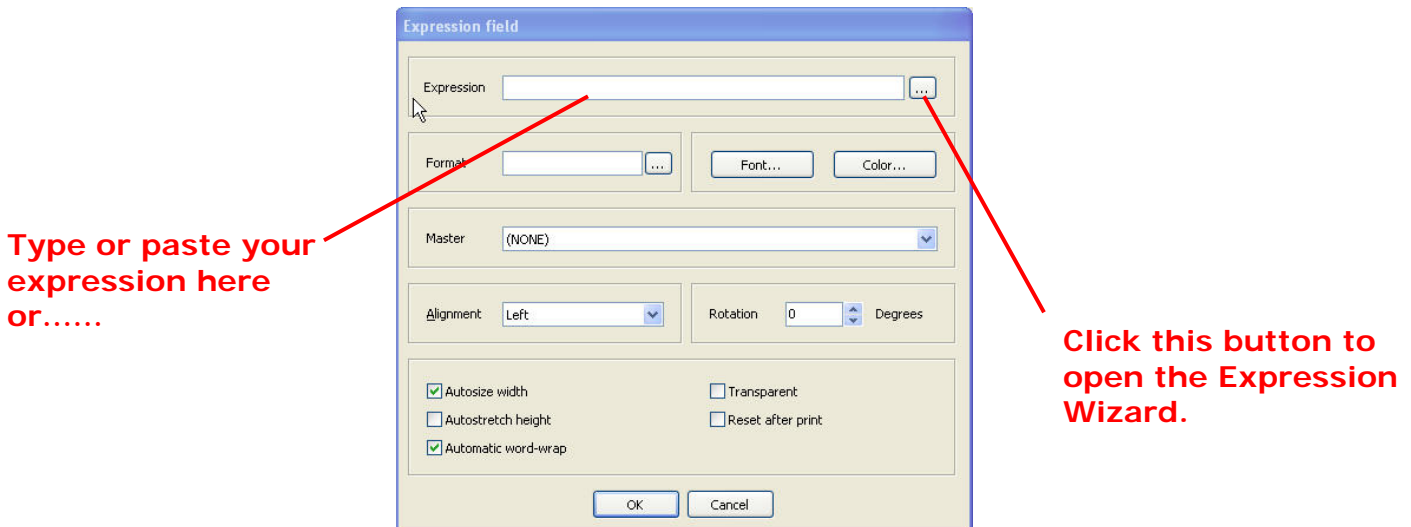
Type or paste your expression here or……

Click this button to open the Expression Wizard.

Fig. 1.2 – The Expression field dialog box

To build the expression, simply type it in the box provided (or you can copy and paste the text from another expression on your report into the box) or, you can click the ellipsis ([…]) next to the expression line and open the Expression Wizard.

Click this button to select from a list of Functions
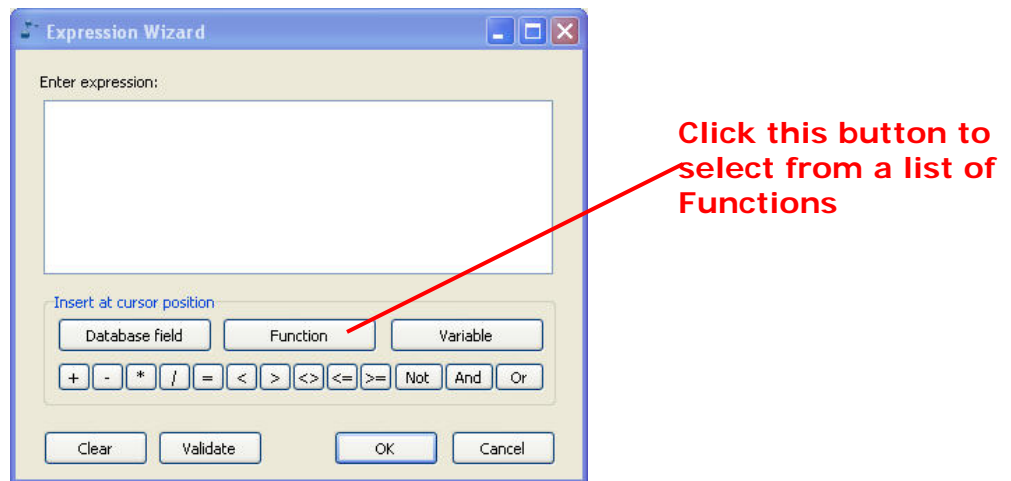
Fig. 1.3 – The Expression Wizard

From the Expression Wizard you can use a combination of text, database fields, variables, and functions. When stringing together any of these, the '+' must be used.

Fig. 1.4 – Function Categories

When clicking the Function button you will be presented with several functions categories and available functions within those categories. To narrow the search you can click on the category in the left column. The right list will then display only the functions that are in the selected category.

2 – Date & Time Functions

Below are some of our more commonly used date and time functions.

CALCDATE(DT,D,M,Y):
Adds D days, M months and Y years to a given date DT. Returns a date.
Example: CALCDATE(ArgosData.Your_Date, 2, 4, 6)
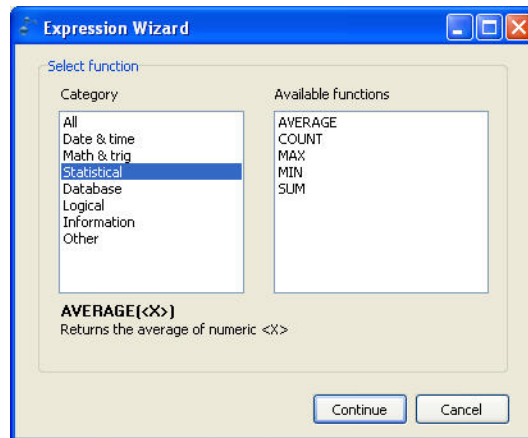
CALCTIME(T,H,M,S):
Adds H hours, M minutes and S seconds to a given time T. Returns a time.
Example: CALCTIME(ArgosData.Your_Time, 2, 4, 6)

DATE:
Returns current date when report is executed.

DAYOFWEEK(D):
Returns the day of the week (1..7) for a given date.
Example: DAYOFWEEK(ArgosData.Your_Date)

DAYSTRING(D):
Returns the day name for the given day (1=Sunday,2=…). Often used with DAYOFWEEK.
Example: DAYSTRING(1) or DAYSTRING(DAYOFWEEK(ArgosData.Your_Date))

EXTRACTDAY(Date):
Returns the day of the month (1 – 31) from a given date.
Example: EXTRACTDAY(ArgosData.Your_Date)

EXTRACTMONTH(Date):
Returns the month from a given date.
Example: EXTRACTMONTH(ArgosData.Your_Date)

EXTRACTYEAR(Date):
Returns the year from a given date.
Example: EXTRACTYEAR(ArgosData.Your_Date)

MONTHSTRING(M):
Returns the month name for the given month M (1..12). Often used with EXTRACTMONTH.
Example: MONTHSTRING(1) or MONTHSTRING(EXTRACTMONTH(ArgosData.Your_Date))

PRINTDATE:
Returns the date when report is executed.

TIME:
Returns the current system time.

WEEKOFYEAR(Date):
Returns week number (1-52) from given a date.
Example: WEEKOFYEAR(ArgosData.Your_Date)

3 – Math Functions

Below are some of our more commonly used math functions.

ABS(<I>):
> Returns the absolute value of I.
>> Example: ABS(ArgosData.Some_Number)

DIV(<X>,<Y>):
> Returns X divided by Y.
>> Example: DIV(ArgosData.Some_Number, ArgosData.Some_Other_Number)

FRAC(<X>):
> Returns the fractional part of X.
>> Example: FRAC(ArgosData.Some_Number)

INT(<X>):
> Returns the integer part of X.
>> Example: INT(ArgosData.Some_Number)

SQRT(<X>):
> Returns the square-root of X.
>> Example: SQRT(ArgosData.Some_Number)

4 – Statistical Functions

Below are some of our more commonly used statistical functions.

AVERAGE(X):
Returns the average of X. In a detail band, this function will return the average of the numbers up to the current detail record. In a summary band, it will return the average of all of records.
Example: AVERAGE(ArgosData.Some_Number)

COUNT:
Returns the current increment for each iteration.

MAX(X):
Returns the highest X. In a detail band, MAX will return the highest X up to the current record. In a summary band, MAX will return the highest X from all the records.
Example: MAX(ArgosData.Some_Number)

MIN(X):
Returns the lowest X. In a detail band, MIN will return the lowest X up to the current record. In a summary band, MIN will return the lowest X from all the records.
Example: MIN(ArgosData.Some_Number)

SUM(X):
Returns the summation of X. In a detail band, it will return the sum of X up to the current record. In a summary band, SUM will return the sum of all records.
Example: SUM(ArgosData.Some_Number)

5 – Database Functions

Below are some of our more commonly used database functions.

COLUMNO:
> Returns the current column number.

DETAILCOUNT:
> Returns the number of detail records. Detail Count is the total number of records printed or displayed in your detail band in your report. The number will always be the same no matter what band you place it in. They are counted before they are printed.

DETAILNO:
> Returns the current detail record number. Detail Number is a cumulative count of all the records printed or displayed in your detail band. If you put Detail Number in your report summary band, it will be the same as Detail Count. If you put it in a page footer band it will be the total number of records printed so far.

EOF(TABLE):
> Returns TRUE if there are no more records in the dataset. Returns FALSE otherwise. The last detail band will show FALSE because the cursor has not moved past the last record.
>> Example: EOF('ArgosData')

FIELDLEN(TABLE,FIELD):
> Returns the length of datafield.
>> Example: FIELDLEN('ArgosData','DataFieldName')

ISEMPTY(TABLE,FIELD):
> Returns TRUE if field contains an empty string. FALSE if field contains data.
>> Example: ISEMPTY('ArgosData',' DataFieldName ')

ISNULL(TABLE,FIELD):
> Returns TRUE if field is null. FALSE if field is not null.
>> Example: ISNULL('ArgosData',' DataFieldName ')

6 – Logical Functions

Below are some of our more commonly used logical functions.

FALSE:
Returns Boolean FALSE.

IF(<Exp>,<X>,<Y>):
Returns X if expression Exp is TRUE. Returns Y otherwise. You can use database fields, other functions or plain text as your values for X and Y. IF statements can also be nested within other IF statements.
Example: IF(DataField1 = 23, DataField2, 'Print this text')

TRUE:
Returns Boolean TRUE.

7 – Informational Functions

Below are some of our more commonly used informational functions.

TYPEOF(<Exp>):
Returns the data type of expression Exp.
Example: TYPEOF('Expression2') where 'Expression2' is a name of an expression field.

8 – Other Functions

Below are some of our more commonly used other functions.

CHR(<I>):
    Converts the ordinal ASCII value to a character.
        Example: CHR(ArgosData.DataField)

COPY(<X>,<St>,<Len>):
    Returns the substring of string X at start position St of length Len. Like SUBSTR in Oracle.
        Example: COPY(ArgosData.DataField, 1, 30)

COUNTER:
    Returns the current count. Increments each time it is printed.

CURRENCY:
    Returns Window's default currency.

DATEDIFF(<D1>,<D2>):
    Returns the difference of days from date D1 to date D2.
        Example: DATEDIFF(ArgosData.Your_Date1, ArgosData.Your_Date2)

ELEMENTEXISTS(<Name>):
    Returns TRUE if an element exists in the report.
        Example: ELEMENTEXISTS('band2') where 'band2' is a name of a band in the report.

FORMATNUMERIC(<F>,<N>):
    Returns number N formatted in format F.
        Example: FORMATNUMERIC('$###,###.##',ArgosData.Your_Numeric_DataField) formats the
        number 12345.678 to '$12,345.68'

INSERTSTR(<Source>,<Insert>):
    Inserts string Insert into string Source at position specified by '%'.
        Example: INSERTSTR('%s World', 'Hello') will return 'Hello World'.

LEFTSTR(<STR>,<LEN>):
    Returns the left LEN number of characters of string STR.
        Example: LEFTSTR('Hello World', 5) will print 'Hello'.

LOWER(<X>):
    Returns string X in lowercase letters.
        Example: LOWER(ArgosData.Datafield)

NEWPAGE:
    Forces a page feed.

PADLEFT(<S>,<Len>):
    Returns string S padded to the left with spaces to make S Len characters long.
        Example: PADLEFT(ArgosData.DataField,10)

PADLEFTZERO(<S>,<Len>):
    Returns string S padded to the left with '0' to make string S Len characters long
        Example: PADLEFTZERO(ArgosData.DataField,10)

PADRIGHT(<S>,<Len>):
>Returns string S padded to the right with spaces to make S Len characters long.
>>Example: PADRIGHT(ArgosData.DataField,10)

PAGECOUNT:
>Returns the total number of pages printed in the report.

PAGENUMBER:
>Returns the current page number in the report.

PIXELS(<X>):
>Converts the number X into pixels.
>>Example: PIXELS(5) or PIXELS(ArgosData.Your_Numeric_DataField)

PRETTY(<X>):
>Capitalizes the first character of string X.
>>Example: PRETTY(ArgosData.Datafield)

RECORDCOUNT(<DS>):
>Returns the number of records in the report.
>>Example: RECORDDCOUNT('ArgosData')

RESETEXPR(<exprname>):
>Resets aggregated expression exprname.
>>Example: RESETEXPR('Expression2')

RGBCOLOR(<RED>,<GREEN>,<BLUE>):
>Converts RGB color values to a decimal color value. For use with functions SETCOLOR and SETFONTCOLOR.
>>Example: RGBCOLOR(01,31,71)

RIGHTSTR(<STR>,<LEN>):
>Returns the LEN rightmost characters of string STR.
>>Example: RIGHTSTR(ArgosData.DataField, 3)

SETCOLOR(<Element>,<Color>):
>Sets a band's background color. Use function RGBCOLOR to get Color. Right click expression and uncheck 'Enabled' to not print the Boolean value.
>>Example: SETCOLOR('Band2',RGBCOLOR(12,13,99)).

SETFONT(<Element>,<Fontname>):
>Sets a report element's font. TRUE will be returned if the function executes properly. Right click expression and uncheck 'Enabled' to not print the Boolean value. Does not work for band elements.
>>Example: SETFONT('Reportlabel2', 'Arial')

SETFONTCOLOR(<Element>,<Color>):
>Sets a report element's font color. Use function RGBCOLOR to get Color. TRUE will be returned if the function executes properly. Right click expression and uncheck 'Enabled' to not print the Boolean value. Does not work for band elements.
>>Example: SETFONTCOLOR('txtLable1',RGBCOLOR(04,04,03)).

SETFONTSIZE(<Element>,<Size>):
>Sets a report element's font size. TRUE will be returned if the function executes properly. Right click expression and uncheck 'Enabled' to not print the Boolean value. Does not work for band elements.
>>Example: SETFONT('Reportlabel2', 18)

SETFONTSTYLE(<Element>,<Bold>,<Italic>,<Underl>,<Strike>):
Sets a report element's font style. TRUE will be returned if the function executes properly. Right click expression and uncheck 'Enabled' to not print the Boolean value. Does not work for band elements.
Example: SETFONTSTYLE('ReportLabel2', TRUE, FALSE, TRUE, TRUE)

STR(<X>):
Converts number X to string data type.
Example: STR(ArgosData.Your_Numeric_Datafield)

STRETCHSR(<S>,<L>):
Inserts L spaces between each character of string S. Used to "stretch" a string.
Example: STRETCHSTR(ArgosData.DataField, 6)

STRLEN(<S>):
Returns the length of string S.
STRLEN(ArgosData.Datafield)

STRTOINT(<X>):
Converts a valid integer string to integer data type.
Example: STRTOINT(ArgosData.DataField)

STRTONUM(<X>):
Converts a valid number string to a number data type.
Example: STRTONUM(ArgosData.DataField)

TRIM(<S>):
Returns string S without leading and trailing spaces.
Example: TRIM(ArgosData.DataField)

UPPER(<X>):
Returns string X in uppercase letters.
Example: UPPER(ArgosData.DataField)

VAREXISTS(<Name>):
Returns TRUE if variable Name has been created with function SETVAR. Returns FALSE otherwise.
Example: VAREXISTS('VariableName')

Expressions Summary

The expression evaluator works with four data types: Strings, Integer, Float, and Boolean. Binary data and memo fields are not supported in expressions. Below is a list of how database fields are converted to report data types:

Data type	Field type
String	String fields, date and time fields
Integer	SmallInt fields, byte fields, integer fields
Float	Float fields, currency fields
Boolean	Boolean (logical) fields

Below is a list of the supported operators that you can use when creating an expression:

Operator	Description
+	Add
-	Subtract
*	Multiply
/	Divide
()	Parentheses
And	Logical AND
Or	Logical OR
Not	Logical NOT
=	Equal
<	Less than
>	Greater than
<=	Less than or equal
>=	Greater than or equal
<>	Not equal

Using Strings in Expressions

Strings in expression should be put in single quotes. The following is a valid expression:

'Computers are great!'

Maximum string length is 255 characters.

<u>**Conclusion**</u>

You should now be more familiar with the functions in the Band Editor of ***Argos.*** Please contact Evisions to schedule any purchased user training, or avail yourselves of the free resources located in the support section of our website. If you have any problems or encounter any errors, either with the use of functions, the Band Editor or this document, please contact us!

Getting Help

If you are having problems, please search our knowledge base: http://helpdesk.evisions.com
If you are unable to find the solution, please submit a HelpDesk request including a detailed explanation of the problem.

Also, if you find that areas of this documentation require additional detail or clarification, please let us know. We are constantly trying to improve our documentation.

Important Links

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