Convertisseur

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COLLABORATORS			
	TITLE : Convertisseur		
ACTION	*NAME*	*DATE*	*SIGNATURE*
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REVISION HISTORY			
NUMBER	DATE	DESCRIPTION	NAME

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Convertisseur

1.1 Convertisseur d'unités V1.5

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Guide V1.5 7.June.97

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 but not expensive.
~~~~~~
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~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
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```

1.2 Arexx

```
                The unit editor has an Arexx port: "Convertor"
You can send commands and do everything you could do with the mouse with it.
If there is an error, it sends back a message discribing the erreur.
If the command has a result it will be send back with a character string.
Attention! Even if there are common functions in the editor and convertor's port,
Most editor's commands aren't recognized by the editor and vice versa.
See
```

```
                    the convertor's Arexx commands
                    Here's the list of commands available in the unit editor:
(Alt-F and then e to have 'é')

Syntax(s)                      Result    explication & example
----------                     ------    ---------------------
Décalage {New Interval}         No       Change the Interval of the current unit.
                                         Example: Décalage 27/14


Déplace {New position}          No       Move the unit so that its position is equal
                                         to the argument.
                                         Example: Déplace 3


Efface                          No       Delete the current unit
                                         Don't forget to use Unité before!
                                         Example: Groupe Puissance
                                                  Unité cv
                                                  Efface


Etat                         "Editeur"   So you can know if it's the editor or the
                                         convertor which is active. (the same  ←
                                            command exists
                                         in convertor mode).


Groupe {nom d'un groupe}        No       Selects the chosen group.
                                         Example: Groupe Temps
                                         (You can use either lower or upper case,
                                         i.e. Temps is same than temps and TEMPS)


Nouveau [{name}],[{Interval}] Position Creates a unit with the selected name and  ←
    interval.
           ...,[{zero}]                  The zero argument is ignored if it isn't a  ←
              temperature.

                                         Default values (If not provided):
                                         name = "", Interval = 1, zero = 0.
                                         Sends back the object's position in
                                         the list, the same than the number of  ←
                                            objects
                                         (a new unit is always put in the bottom of  ←
                                            the list)
                                         Example: Groupe Longueur
                                                  Nouveau hand, 0.185
                                                  Déplace 2


NUnités                         Number   Sends back the number of units in the  ←
    current group
                             of units    groupe choisi. Useful for Déplace.
                                         Example: Groupe Volume
                                         ======== Unité l
                                         this   | x = NUnités
                                         example| Déplace x-1
                                         puts   '============
                                         the unit in next to|
                                         last position.     |

Ouvre                           No       Loads the Unitdata file and
                                         replaces the current units. The
```
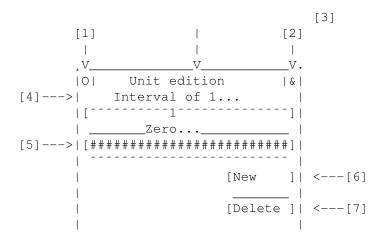
```
                                            group becomes Longueur and the unit
                                            m (or the first).


Renomme {New name}              No          Changes the current unit's name
                                            Example: Groupe Longueur
                                                     Unité rayTerre
                                                     Renomme rayEarth


Sauve                           No          Save the current unit set.
                                            Be very careful with that command!
                                            (See
              Sauve
              )

                                            Example: Groupe ...
                                                     Nouveau ...
                                                        ·
                                                        ·  (Various
                                                        ·   modifications)
                                                        ·
                                                     Enregistre


Switch                          No          Goes back to the main part.
                                            It's the same than "Go back" in the menu

              Unit group
              ·


Unité {name of an unit}         No          Selects a unit in the list.
                                            First choose the group
                                            Example: Groupe Vitesse
                                                     Unité m/s
                                            (You can use either lower or upper case)

Zéro {New zero}                 No          Changes the current's unit zero.
                                            Error if the curent groupe isn't  ←
                                                Température.
```

1.3 Window (editor)

```
                                            [3]
          [1]                 |         [2]
           |                  |          |
          ¸V_____V_____V.
          |O|    Unit edition      |&|
  [4]--->|    Interval of 1...      |
          |[¯¯¯¯¯¯¯¯¯1¯¯¯¯¯¯¯¯¯¯]|
          | _____Zero..._____ |
  [5]--->|[####################]|
          | ----------------------- |
          |                   [New   ]|  <---[6]
          |                  _____ |
          |                   [Delete ]|  <---[7]
          |                           |
```

```
          |     Groupe        Unité    |
          ||Longueur |\textdegree{}| |m         |\textdegree{}||
          ||Surface  |\textdegree{}| |fath      |\textdegree{}||
          ||Volume   |\textdegree{}| |rd        |\textdegree{}||
          ||Temps    |\textdegree{}| |chain.gun|#||
          ||Vitesse  |\textdegree{}| |mi        |#||<---[8]
          ||Masse    |#| |miUS      |#||
          ||Force    |#| |nmi       |#||
          ||Energie  |#| |au        |#||
          ||Puissance|#| |m          ||
          |-=========='-`=========='|
             ^                  ^
             |                  |
             |                  |
            [8]                [10]
```

1: Quit button. Click on it to quit.
Warning! The unsaved modifications would be lost! (See
                menus
)

2: Depth button. If the window is hidden by another that button would make the ←
    window
go in front of the other, else it would go back everything.

3: Title bar. You can move the window by clicking on that bar, moving the mouse ←
    and releasing the button.

4: Interval field. Contains the current unit's definition:
For example the time's SI unit is the second, so when you add one minute, you add ←
    sixty SI units
(60 sec) so the minute's "interval" is 60.
Mostly it is the convertion in SI system of the unit.
But when it is a
                temperature unit
                , you can't use that way.
Example: When the temperature increases of 1 \textdegree{}F, it increases of 5/9\ ←
    textdegree{}C (0.5555555...). It's that value
Which is in the field.

5: Field for the zero value. It's used for temperature units. It contains the ←
    convertion in SI system
of the unit. Example: 0\textdegree{}F
is 32\textdegree{}C. It's that value which is in the field.

6: Button to create an unit. When you click on that buttpn an "empty" unit is ←
    created in last
position. You can now enter your unit's name in the already selected field, and ←
    define your unit.
(press Tab, the key just above the Ctrl , on the left, to select the next field)
Move then your unit where you want.

8: Button to delete an unit. It would delete the selected unit.
Check you have chosen the unit you want to be deleted BEFORE clicking on that ←
    button!

9: Groups list. It contains the list of the unit groups. Click on one of them to ←
   edit (or view) the
correspondant units.

10:Units list. Click on a name to edit it, the field will change to that unit.
You can move a unit by clicking on it and, without releasing the button , move the ←
    mouse up
and down. If you want the unit to go in a place which isn't visible, you have to ←
   move it several
times. Example: If you want to move the unit 'm' (Group Longueur) to the bottom of ←
    the list,
First select it, move the mouse to the bottom of the list ('au')
Then move the scroll bar at the right down so that m seems to go up, unitl 'm' is ←
    at the top.
Repeat it until you reached the place you wanted.

11:Unit's name. You can edit it by clicking on that field.

1.4 Menus

             Units group

             Help
                Save   A S   Error A E
   Open   A O
   Go back A W

1.5 Units group menu

                   Save A S
Save the current unit set (All groups and units) in the UnitData file.
 !!! WARNING !!!

 MAKE A COPY OF THAT COPY TO AVOID LOSING UNITS YOU DELETE!
 THERE IS NO WAY TO RESTORE DELETED UNITS!!!

 If you deleted units unintentionally,
              Contact
               me, I'll send you
 the default UnitData file.

   Open A O
Loads the UnitData file. So you can revert to the last save. It will erase all ←
   modifications
 you made after the last save.

   Go Back A W
Returns to the main part of the program. Use Save before doing that if you want to ←
    keep the changes

you did, because when the convertor loads the file when the main part is opened.

1.6 Help menu

                   Error A E
Shows informations about last error. Please
                send
                 me that text if you find a bug.
 It's only technical information, so generaly if you made something wrong it ↩
    wouldn't help you to know
 what.

1.7 arexx

                The Convertor has an Arexx port: "Convertor"
You can send in it commands and ask a calculation.
If there is an error it will send a message describing the error.
If the command has a result, it would be send as a character string.
Warning! the
                editor
                's commands aren't the same than these.
Use the Etat command which sends back "Editeur" or "Convertisseur".
Switch to go frome one state to the other.
Here's the Convertor's commands list:
(Alt-F and then E to have 'é')

Syntax(s)   Result   explication & example
---------   ------   ---------------------
Arrondi {digit(s)}   No   Selects the number of digit(s)
                                        to be send back.
                                        Example: Arrondi 3

Calcul   Answer   Calculates the result and sends it.
                                        Example:
                                        Groupe température
                                        Direction gauche
                                        Valeur 81
                                        Unité \textdegree{}F
                                        Direction Droite
                                        Unité K
                                        Différence
                                        Calcul ;Sends 45

Différence   No   Selects the difference mode for the
                temperatures
                        .

Direction Gauche   No   Selects the active side, like the arrow. ↩
    Voir

```
                    Fenêtre
                    Direction Droite                          Gauche is Left and Droite   ←
                         is Right.

Etat                         "Convertisseur" To know if it's the convertor or the editor ←
     which is
                                             active.

Groupe {group's name}           No          Allows to choose a groupe in the list.
                                             la liste. You can use either lower or upper ←
                                                  case.
                                             Example: Groupe temps

GroupeInfo    ->         Selected Group Returns the current group's name.

Niveau                          No          Selects the Level mode for the
                    Temperature
                         group.

Préfixe {Prefix}                No          To choose a prefix. Note that you must have ←
     the
Préfixe {Exposant}                           correct case (m and M aren't the same, for
                                             example).
                                             Examples:Préfixe $\mathrm{\mu}$ or
                                                      Préfixe -6

Quitte                          No          Quits the program and closes the Arexx port ←
     .

Redessine                       No          Redraws the window and recalculate the  ←
     result

                                             (winthout returning it)

Switch                          No          Go to the editor.

Unité {unit}                    No          To choose an unit in the current group.
                                             Example:Groupe temps
                                                     Unité m
                                             Lower and upper case doesn't change.

Valeur {Number}                 Aucun       Enter the argument (by eventually replacing ←
     the old
Valeur {Expression}                          value) in the field.
                                             Examples:Valeur 10
                                                      Valeur Pi/2
```

1.8 This program is giftware

```
               If you use that program regulary,
I would be glad if you sent me a little ( or big ;-) ) gift.
(see
               Contacts
               ), I would send you the keyfile (to allow you to use all functions ←
                    ).
```

You can also send my one of your self-made program, or if you're a magazine, to ↩
    send me the last issue.

If you spread a program using the Convertor (its Arexx port):
* You MUST register (Think I could want to try your program...)
* only send the unregistered version (without any keyfile)!!!!

1.9 distribution

                this program is
                giftware
                . You can freely spread the UNREGISTERED version.
but no file must be modified, deleted or added.
That program shouldn't destroy your Amiga, but anyway I don't take ANY ↩
    responsiblility.

"This program was designed and written with Cando v3.0 © 1994

Inovatronics, Inc.
8499 Grennville Ave. #209B
Dallas, TX 75231 USA
(214)340-4991, FAX 340-8514

Cando, Deckbrowser and their support libraries are the copyrighted sole
proprety of Inovatronics Inc. Reproduction and distribution for any use
other than non-commercial applications is strictly prohibited"

However if any user found a probem in the program or in this helpfile, I would be ↩
    glad to be

                informed
                . See the
                bug
                 and
                future
                .
You can also send my your ideas, suggestions and critics.

1.10 Window

                Here's the window which opens when the "Convertisseur d'unités ↩
                 " is opened:

                (2)
                 _____
    (1) | | Convertisseur d'unités | | (3)
        |-------------------------------|
        ||============|._____.|
        || 1 (4) || 1   (6) ||

```
   ||============|`---------------'|          (If you don't understand  ←
                                                anything, try
   |._____.._____.|          that Image)
   ||      m  (5) ||      m   (7) ||
   |`-------------,`---------------,|
   |             /.==-. Accuracy=14..|(8)
   |             ||* | ##########O.|
   |             || * |(9) |@|Level ||(10)
   |             |   *|      `--------,|
   |             `----,              |
   |    Group        Prefix      Unit |
   | _____  _____  _____|
   | |Length  O| |G  (+9)#| |m   O||
   | |Surface O| |M  (+6)O| |yd  O||
   | |Volume  O| |K  (+3)O| |ft  O||
   | |Time    O| |H  (+2)#| |in  #||
   | |Mass    O| |Da (+1)#| |pc  #||
   | |Energy  O| |    (0)#| |lyr #||
   ---------------------------------
        (11)           (12)         (13)
```

Elements description: (You can quickly have a shorter description of an object by ←
    pointing
on it and pressing Help)

(1) It's the closing button, click on it to quit. It does the same than the
    quit item in the
              General menu
              .

(2) It's the title bar. You can use it to move the window.

(3) that button is used to move the window behind or in front of the other.

(4) You can enter here the value to convert or a calculation which will be ←
    calculated automatically,
    without worring about the Automatic calculation's state (in the
              Unit&calculation menu
)
    For example, if you enter 3/2, it will be replaced by 1.5 as soon as you press ←
        on Return.
    (its called the field in this guide).
    See also *
              Common functions
                        *
              How to convert a value
              .

(5) Unit of the 'start' value. To change it, select the left part (see [9]) and ←
    you can select
    anything else in the lists Unit and eventually Prefix.

(6) Here is the answer. If nothing appears, it's probably because the Automatic ←
    calculation
    option of the
              Unit&calculation menu

```
                          isn't checked.
```

(7) Here's the unit for the 'arrival' (answer). You do like the (5) to change it, ←
    but you must
    now turn the arrow to right.

(8) You can change the accuracy of the result. (the result is stored internally ←
    with full precision)
    Examples: If the result is 0.0415 and that the knob is on 1 dimal, the answer ←
        would be 0.04 if it's
    on 2, the answer will be 0.042, and if it's bigger (3, 5 or 10), the answer ←
        would be 0.0415.
    Note that the calculation speed isn't affected.

(9) There is always one 'part' of the window which is active : Left or right. When ←
    you change
    the unit or the prefix, it will be the showed part which would be affected. ←
        Example: If the arrow
    shows the left, if you click on another item of one of the prefix or unit ←
        lists, it will be the
    'start' unit which will change. There's several ways to change the direction:
    - Click on the arrow
    - Click on the wanted middle of the window (but neither in the field nor in ←
        the window border),
    above the arrow (for example, on the unit you want to change)
    - press the space bar

(10) Here you can choose either Level or Difference mode for the
                Temperature units
                        It's gosthed when the current group isn't temperature.

(11) Unit groups list. When you click on a new group,
    * Both units (start and arrival) become the first of the list (13), which ←
        should be the SI unit.
      See
                Unit list
                .
    - The prefix list (12) can either appear or disappear, depending if the groupe ←
        accepts the
      prefixs or not (for example, centi-Celsius degrees doesn't have any sense, ←
        so temperature
      units doesn't accept units (see Unit list for a full list)
    - if the the prefix list appears, both prefix will be set to 0

(12) Prefix list. The number on the right is the exposant. For example, $\mathrm{\ ←
    mu}$ (-6) and m (->$\mathrm{\mu}$m)
      is 0.000001 meter. To know more about prefixes, see the
                prefix list
                (13) Unit list of the current group. That list change if the group ←
                    changes.
      See the
                Unit list
                .

1.11   tour

                  I'll show you the "Convertisseur d'unités" possibilties, and its ↩
                       functionning in brief.
You'll find buttons in this text, which send to the appropriate section to know ↩
    more about something.
There is also an
                  index
                   which contains every text you can see in the window
(the units exepted, but the groups are presents) and each title of the pages in ↩
    that document.
You can also have some help on an object by positionning the pointer on it and ↩
    pressing Help.

That "tour" is so: There are question, then how to answer them and of course the ↩
    answer.
So you can train by reading the question and trying to answer it.
Note that lots of calculations can by done by head, but we can imagine that you ↩
    could have to work with
more complicated values, so almost everything is done here by the program.

1) How many meters are in 12.3 feet?

Click on ft after having scrolled the Unit list.
Select the field on the top left of the window, use A X to clear the field, type ↩
    '1',
'2', '.' and '3' to write the value. Press enter or return.
The result, 3.74904, appears on the top right (The various object on the window ↩
    are
explained
                  here
).

2) How many tea spoons are in a table spoon? (I mean the liquid contained)

Select the "Volume" groupe and scroll the list on the right to make tbsp and tsp ↩
    appear and choose tbsp.
Replace the 12.3 by 1 in the field: press return to select the field and press ↩
    then three times on
Backspace (<-, on the left of the Del key).
Click on the arrow to make it show the right. Search tsp in the unit list and ↩
    select it.
The answer (nearly 3), appears

3)What's the value of Sin(26\textdegree{})?

We'll work with the angles. Select the corresponding group.
Because the program is radian mode (
                  Window
                  , look the number (4))
First we have to convert 26\textdegree{} in radians. enter 26 in the field and ↩
    select r in the list
(the arrow should already by pointing on right). 0.45378560551853 appears.
Press A J to copy that value in the field, add 'Sin(' before the value,
and ')' after it. Press return. Look on the LEFT to see the result (the conversion
of it from degrees to radians doesn't have any sense):0.4383711....

Note: If you want to kork with that value (for example round it), select the ←
    degrees unit on
the right. You can for example move the knob under the unit's answer to see the ←
    accuracy
increase and decrease.

4) You're informed that the temperature ,which was 295 Kelvins, increased of
9\textdegree{}F. How many \textdegree{}C does that make? And how many \textdegree ←
    {}C had been added?

Select the Température group. Convert 295 K in \textdegree{}F (295 in the field, ←
    eventually a click on
the arrow if it shows the right, and K in the right list, arrow and click on \ ←
    textdegree{}F)
71.33 appears. Copy it in the field with A J, select \textdegree{}C on the right ←
    and
\textdegree{}F on the left. Add '+9' in the field. Return. The temperature is now ←
    of 26.85 \textdegree{}C
Select the cycling button "Level" to make "Difference" appear.
(
                Temperature unnits
                ), and enter 9 on the left. 5 appears on the right.
The temperature have increased of de 5\textdegree{}C.

5)We have never seen prefixes. Here's a little example which will correct this ←
    lack:
How many Megaelectronvolts make two seventieth Kilocalories?

Enter 2/7 in the field, choose M (+6) in the Prefix list and eV in the Unit list.
Click on the left, then on K (+3) in the Prefix list and finally on cal in the ←
    Unit list.
The answer appears: 7'466'268'240'286'400 Mev are needed to make 2/7 de Kcal, so ←
    nearly
7.5·10^15.

6) What time in minutes, does the Sun's light to go 'till Pluton, which is nearly ←
    40 astronomical
units far of the Sun?

Let's begin by converting 40 au in m (group 'Longueur', 'au' on the left and '40' ←
    in the field).
Now copy the result in the first buffer (
                Copy&Past menu
)
with 'Answer -> 1'. Lets go to the 'Vitesse' group to have the light's speed and ←
    do the calculation.
Convert 1 c in m/s and copy the answer in the field (copy r->l, See the
                Unit&Calculation menu
)
s=d/t (s=speed, d=distance and t=time), you certainly know it. We want to find t: ←
    t=d/v.
Add '/' on th left of the field (which makes '/299...') and copy the first buffer ←
    on the left. Evaluate
that by pressing twice Return. Select the 'Temps' group to convert that in minutes ←
    . Choose min
on the right and the answer appears:
Nearly 332 minutes, so nearly 5 hours and a half

```
7) You are watching a storm. If the gap between the thunder and the lightning is  ←
   3.6 seconds,
how far was it? [I know, it's a difficult question, because we have to do some  ←
   work ourself]
Perhaps I even did it wrong ;-)
```

```
We can find an equation system which D unknow is:
```

```
     Tg·Sl·Ss   Tg = Time gap, here 3.6
D = ----------  Sl = Speed of light, c
       Sl-Ss    Ss = Speed of Sound, Mach.
```

```
In the syntax we'll have to use, it is:
(3.6*c*Mach)/(c-Mach) (See
                  Common Functions
                  )
We'll use the buffers 1 and 2 for c and Mach. We have to create them at the  ←
   beginning.
Let's go to the 'Vitesse' groupe and convert 1 c in m/s. Copy the answer in the  ←
   first buffer.
(See
                  Copiy&paste menu
                   if you forgot how.) Put On the left and save the answer
in the second buffer. Enter '(3.6*' in the field (after having erased the 1),  ←
   without pressing on Return,
because the expression isn't finished and would produce an error (but you can try  ←
   for fun).
Paste the first buffer on the right, add a '*', paste the second buffer, still on  ←
   the right, add ')/(',
Paste the first buffer (At right again). Add '-' and the second buffer. Finish by  ←
   closing the
parenthesis. Press Return twice. At least! We have finished.
The storm falled 1193 meters far, or 1.2 kilometers.
```

```
We can have a general formula for that: add '/3.6' on the right of the field, and  ←
   evaluate.
You can multiply the resulting value (in the field) by the number of second  ←
   between the moment when
you saw something and when you heard it and you'll obtain the distance.
```

```
I think I can't go further, but more complicated than the 7th problem is rare (I  ←
   think)
```

1.12   How to convert a value?

```
                First select the group, then the unit and the prefix which must be  ←
                     in the direction showed by
the arrow, click on it and then the unit and prefix of the opposite side. I.e. If  ←
   the arrow
shows the right, first select the unit of the answer, and if it pointed on left,  ←
   start by
selecting the question's unit.
(See
```

```
                    Window
                     for informations)
```

Example: Let's convert 3 km/s in mph
These units are speeds (Vitesse in french), so click on 'Vitesse' in the 'Group' ←
    list.
If the arrow points to right, select the unit for the answer (mph) in the list.
Else select the prefix for the question [K (+3)]. You are perhaps wondering: Why ←
    prefix for the
question and unit for the answer?
Mph has no prefix, so 0 must be kept.
m/s is the default unit, but we have to change the prefix
If it was for example mft/s, we would have to change the unit and the prefix.
Then click on the arrow to make it change and select the other unit (see above)
We want three km/h, so select the field on the top left and write 3 instead of its
contents. Press Return and the calculation is made look in the rectangle on the ←
    top right:
there is 6710.8. It means that 3 Km/s are the same than 6710.8 mph. (You can ←
    change the accuracy
of the result by moving the knob just under [mph]. Change 3 to Pi to see what the ←
    accuracy changes.
See also: *

```
                    Window
                     to know more about the gadgets
          *
                    Menus
                     to have informations about the menus
          *
                    Tour
                     to have more example.
```

You remarked that the result changed at every your modifications.
That feature allows you to see fast how many knots, foot per second, and so on by ←
    simply
clicking on the appropriate unit. (If 'Automatic calculations' is disabled,
you have to use 'Calculate' every time. See

```
                    unit&calculation
                    ).
```

To know more about a precise unit, see our

```
                    unit list
                    or our
                    prefix list
                    .
```

1.13 Menus

```
                            convertisseur d'unités' menus



                    General
                     About       (About the program)
 Restart    (Reset the program)
 Quit       (Quit it)
```

```
            unit&calculation
             Calculate        (Recalculate the result)
Redraw           (Redraw the window)
Switch direction   (Turn the arrow)
Inverse            (Switch the units r<->l)



            Copy&past
             Copy»...  (Copy submenu)
Paste»... (Paste submenu)



            Prefs
             Automatic Calculation  (On=Recalculate at every event which could ←
                change the result)
Font                (Ask you for a new font)
Save                (Save the above settings to envarc: and env:)



            Help
             Contents  (Shows you this' guide Contents)
Index     (Shows you this' guide Index)
Error     (Shows you information on last error)
```

1.14 Menu `General'

```
About     (A ?)
  Shows you information about the program, Cando and giftware
Restart  (A W):
  This item has the same effect than quitting then reloading the program.

Quit     (A Q):
  You can quit the program with this item.
  Same effect than the close button.

Unit Editor (A U):
  Closes the window and opens Unit Editor. Current values are lost.
```

1.15 Menu `Unit&Calculation'

```
            Calculate             (A C):
  This item launches the result calculation.

Redraw            (A R):
  This redraws the window and recalculate the result if the 'automatic  ←
     calculation' option
  is set (see
            menu prefs
            )
Switch direction      (Space):
  This turns the arrow. It does the same than click on it.
```

```
   See
               Fenêtre
               .
```

```
 Inverse          (A I):
   This does swap the answer and question's units, without modifying the field.
```

```
 Copy A->Q        (A J):
   Copies the result (top-right) in the top-left field, without changing the units ←
     .
```

1.16 Menu `Copy&Paste'

```
Copy »
 Result->1  (A 1):
   Recalculates the result and saves it in the "Buffer 1".
   That buffer is a memory area like the clipboard. However note that these values
   can't be copied in another program. Even if you open several `Convertisseur d' ←
       unités'
   at one time, every one will have his own buffers.
 Result->2  (A 2):
   Recalculates the result ans saves it in the "Buffer 2"
 Entry->1  (A 3):
   Copies the field's value in the "Buffer 1"
 Entry->2  (A 4):
   Copies the field's value in the "Buffer 2"
```

```
 Paste »
 The number at the left of an item shows the concerned "Buffer",
 Left adds the string at the left of the field's value,
 Right adds the string at the right, and
 Field replaces the existing text.
```

1.17 Menu `Prefs'

```
               Automatic calculation (A A):
   The mark at the left of this item toggles when you select it. When there is no  ←
       mark
   the calculation will be made only when you use the `Calculate' item. Otherwise  ←
       it
   is done at each operation which could change that result:
   - Pressing `Return' in the top-left field,
   - Clicking on a list (Prefix or Unit),
   - Changing the group,
   - Moving the `Accurate' knob,
   - Clicking the Level/Difference button.
     (For more informations about these objects, see
               Window
               ).
```

```
 Font (A F):
   Opens a Font selector:

   _____
  [o]      Font Selector      [a]
  |flow                 |#|11 | | |
  |flow_thin            |#|13 | | |
  |garnet               |#|15 | | |
  |helvetica            |#|    | | |
  |lonewolf             |#|    | | |  (1)=Font list
  |LS                   |#|    | | |  (2)=Size list of the selected font .Double-click
  |novell               | |    | | |       to use it.
  |opal        (1)      | |(2)| | |  (3)=Preview of the selected font..
  |paris                | |    | | |
  |PSFonts              | |    | | |
  |ruby                 | |    | | |
  |sapphire             | |    | | |
  |star_image           | |    | | |
  |sttngdisp            | |    | | |
  |symbol               | |    | | |
  |symbols              | |    | | |
  |times                |#|    | | |
  |topaz                |#|    | | |
  |TrinomicSign         |#|    |_| |
  |TRISONOMIE21         |A|    |A| |
  |Xcourier             |V|    |V| |
  |---------------------------|
  |Aa0Bb1Cc2Dd3Ee4Ff5Gg6Hh7Ii8Jj
  |                           |
  |                           |
  |            (3)            |
  |_____|
```

```
   Use the closing button (top-left) to cancel and double-click on the size you  ←
        want
   to accept it, after having selected the font you want.
   The button, the labels and the texts in the beveled rectangles (top)
   will be affected. use Save to make your choice definitive.
```

```
Save (A S):
   Save the current font and the 'automatic calculation' state in
   envarc:Convertor  and env:Convertor
```

1.18 Menu `Help'

```
             Contents (A H):
 Shows you this' guide
             Contents
             Index (A Y):
 This makes the Index2 link index} appear
```

```
Error (A E):
   If the screen has flashed and a message have appeared in the title bar, it means ←
        that
```

```
either there is a bug in Convertisseur or you made something you shouldn't, for  ←
    example
– Delete a file from Convertisseur's directory
– Enter something like 4/0 in the field.
If you think it is a bug of Convertisseur, please send me the contents of the  ←
    requester
that pops up with this function, it would be easier for me to fix it.
```

1.19 Prefixes list

```
abreviation    complete name exposant        factor

    Y            Yota-        +24   1 000 000 000 000 000 000 000 000
    Z            Zêta-        +21       1 000 000 000 000 000 000 000
    E            Exa-         +18           1 000 000 000 000 000 000
    P            Péta         +15               1 000 000 000 000 000
    T            Téra-        +12                   1 000 000 000 000
    G            Giga-        + 9                       1 000 000 000
    M            Méga-        + 6                           1 000 000
    K            Kilo-        + 3                               1 000
    H            Hecto-       + 2                                 100
    Da           Deca-        + 1                                  10
                 (unit)         0                                   1
    d            Deci-        - 1                                 0.1
    c            Centi-       - 2                                0.01
    m            Milli-       - 3                             0. 001
    $\mathrm{\mu}$        Micro-    - 6                                         0. 000 001
    n            Nano-        - 9                     0. 000 000 001
    f            Femto-       -12                 0. 000 000 000 001
    a            Atto-        -15             0. 000 000 000 000 001
    z            Zepto-       -18         0. 000 000 000 000 000 001
    y            Yocto-       -21     0. 000 000 000 000 000 000 001
```

1.20 Units list

```
            Click on a group to have informations on the concerned units.


        Length

        Surface

        Volume

        Time

        Speed

        Mass

        Force
```

Energy

Power

Pression

Temperature

Angles

Memory
Sorry, some units are missing in this list because it was annoying ←
        to change the list every time
I added a new unit (It happened quite often), and I'm going to make an Arexx ←
   program which
would do it automaticaly.

1.21   Memory units

abreviation complete name corresponding base unit [bit]

abreviation	complete name	corresponding base unit [bit]
Bit	Bit	1
Byte	Byte	8
Kbit	KiloBit	1024
Kbyte	KiloByte	8192
Mbit	MegaBit	1048576
MByte	MegaByte	8388608
Gbit	GigaBit	1073741824
GByte	GigaByte	8589934592
TByte	TeraByte	8796093022208

1.22   Length units

abreviation complete name corresponding SI unit [m]

abreviation	complete name	corresponding SI unit [m]
m	Meter	1
fath	Fathom	1.82880365761
rd	Rod	5.02921005842
chain.gun	Chain (Gunther)	20.1168402337
chain.ram	Chain (ram.)	30.47999995367
mi	International mile	1609.344
miUS	US statute mile	1609.34721869
nmi	Nautical mile	1852
EarthRay	Radius of the Earth	6371030
au	Astronomical unit	149597900000
lyr	Light year	9460528404880000
pc	Parsec	30856781858500000
fermi	Fermi	0.000000000000001
Å	Angström	0.0000000001

```
      $\mathrm{\mu}$        Micron                                        0.000001
   mil     Mil                                          0.0000254
    in     Inch                                         0.0254
 link.gun  Link (Gunther)                               0.20116800153371
 link.ram  Link (Ram.)                                  0.3047999995367
    ft     Foot                                         0.3048
   ftUS    US survey foot                               0.304800609601
    yd     Yard                                         0.9144
```

You can use prefixes with length

1.23 Surface units

```
 abreviation       complete name          corresponding SI unit [m$^2$]

  m^2 (=m$^2$)    Square meter                        1
                                                                 -28
    b            Barn                                 1·10
    ha           Hectare                        10000
    a            Are                            100
   acre          Acre                          4046.87260987
```

There was some problems (One Hm^2 = 10000 m^2, but one Hb = 100 b) with the ↩
   prefixes,
so it isn't possible to use them with the Surfaces group

1.24 Volume units

```
              abreviation complete name     corresponding SI unit [m$^3$]

   m^3 (=m$^3$)   Cubic meter                      1
    st          Stere                     1
  UKbbl         English barrel            0.16365913010917
   bbl          Barrel                    0.158987294928
 USlqbbl        Us Lq Barrel              0.11924046921363
 USdrbbl        Us Dr Barrel              0.115627121035
  UKBu          English Bushel            0.03636870153189
   bu           bushel                    0.03523907
  USBu          Us Bushel                 0.03523901048776
   l            Liter                     0.01
   pk           Peck                      0.0088097675
 galUK          English gallon            0.004546092
  galC          Canadian gallon           0.00454609
  gal           American gallon           0.003785411784
   fbm          Board foot                0.002359737216
   qt           Quart                     0.000946352946
   pt           Pint                      0.000473176473
   cu           American cup              0.0002365882365
  ozfl          American ounce            0.00002957352956
  ozUK          English ounce             0.000028413075
  tbsp          Table spoon               0.00001478676478
   tsp          Tea spoon                 0.00000492892159
```

For the same reasons than the
                surface units
                  ,
The prefixes are disabled for the volume units.

1.25 Time units (temps)

```
   abreviation complete name        corresponding SI unit [s]

     s            Second                         1
    min           Minute                        60
     h            Hour                         3600
     d            Day                         68400
     yr           Year                  31556925.9747
```

Here you can use prefixes

1.26 Speed units (vitesse)

```
   abreviation complete name              corresponding SI unit [m/s]

   m/s           Meter per second                 1
   ft/s          Foot per second                  0.3048
   kph           Kilometer per second             0.27777777777...
   mph           International miles per hour      0.44704
   knot          Knots                            0.51444444444...
   Mach          Mach                       331.6
    c            Speed of light          299792458
```

Here you can use prefixes.

1.27 Mass Units (masse)

```
   abreviation complete name corresponding SI unit [Kg]

    g            Gram                       0.001
    lb           Pound                      0.45359237
    oz           Ounce                      0.028349523125
   slug          Slug                      14.5939029372
   lbt           Troy pound                 0.3732417216
   ton           Ton                      907.18474
  tonUK          English Ton             1016.0469088
    t            Metric ton             1000
   ozt           Troy ounce                 0.0311034768
    ct           Metric carat               0.0002
  grain          grain                      0.00006479891
    u            Unifed atomic mass         0.0000000000000000000000000016605402
                                                     -27
```

```
Here you can use prefixes.                    (1.66·10   )
```

1.28 Force units

```
   abreviation complete name  corresponding SI unit [kg·m/s$^2$]

  N              Newton                    1
 dyn             Dyne                      0.00001
  gf             Gram-force (See remark)   0.00980665
 kip             Kilopound-force           4448.22161526
 lbf             pound-force               4.4482216526
 pdl             Poundal                   0.138254954376
```

```
Here you can use prefixes.
```

```
Remark: The mass units followed by "-force" means their weight.
```

1.29 Energy unités (energie)

```
   abreviation complete name corresponding SI unit [kg·m$^2$/s$^2$]

  J              Joule                    1
 erg             Erg                      0.0000001
 cal             Calorie                  4.1868
 Btu             Btu ($^1$)               1055.05585262
therm            EEC therm        105506000
  eV             Electronvolt             0.0000000000000000000160217.733
                                                    -19
                                          (1.6·10   )
```

```
You can use prefixes.
($^1$) The Btu unit is from the international table.
```

1.30 Power units (puissance)

```
   abreviation complete name corresponding SI unit [kg·m$^2$/s$^3$]

  W              Watt                     1
 hp              Horse power              745.699871582
 cv              Cheval vapeur            745.699871582
```

```
Here you can use the prefixes.
```

1.31 Pression units

```
abreviation complete name  corresponding SI unit [kg/m·s$^2$]

  Pa           Pascal                     1
 atm           Atmosphere (normal)     101325
 bar           Bar                     100000
 psi           Pound-force/square inch  6894.75729317
 torr          Torr                     133.322368421
 mmHg          Mercure milimeter st 0\textdegree{}C  133.322368421
 inHg          Mercure inch at 0\textdegree{}C     3386.38815789
 inH20         Water inch at 60\textdegree{}F      248.84
```

Prefixes can be used.

1.32 Temperature units (température)

```
               abreviation complete name corresponding SI unit [\textdegree{}C]
```

1) 0 of the left unit is...

```
   \textdegree{}C           Celsius degrees             0
   \textdegree{}F           Fahrenheit degrees       -17.777777...
   K            Kelvin                   -273.15
   \textdegree{}R           Rankine degrees          -273.15
```

2) A change of one of the left unit is...

```
   \textdegree{}C           Celsius degrees             1
   \textdegree{}F           Fahrenheit degrees        0.555555...
   K            Kelvin                     1
   \textdegree{}R           Rankine degrees           0.555555...
```

You CAN'T use prefixes in this group.

Unlike the other units, the differents units haven't the same zero
(Exept \textdegree{}R and K). So the conversion of a difference or a level return ←
   different results.
See the 4th question of the
              tour
               for concrete examples
Note that the Difference/Level switch (see
              Window
) has no effect if
the two units are Kelvins or Rankine degrees, since their zero are the same.
If you haven't clearly understood the difference, see
              this more complete explanation
              .

1.33 Angles units

```
  abreviation complete name corresponding SI unit [r]
```

```
    \textdegree{}              Degre                          0.01745329251994
     r              Radian                      1
    grad            Grade                       0.01570796326795
  arcmin            Arc minute                  0.00029088820867
   arcs             Arc second                  0.00000484813681
```

1.34 Common functions

You can give a calculus as a value in the field, and when you ←
press Return, it will be
evalued.
Here is a description of the syntax of some functions, and examples.
For a concrete use of that possibility, see the
tour
.
Note: For those who know CanDo, the syntax is exactly the same than the functions ←
.
(I use the 'EvaluateExpression()' function to do that)

The four operations: a+b a−b a*b a/b

Trigonometry: Sin(ang) Cos(ang) Tan(Ang) ; Asin(r) Acos(r) ATan(r) ;
               SinH(r) CosH(r) TanH(r) ; AsinH(r) AcosH(r) AtanH(r) .
Note that all angles are radians.

Log: Log10(n) LogE(n)

Misc: SquareRoot(r) ; a^b (power: You must write x^2 to say x^2)
               Exp(r) (E^r) and Pi. Exposant: aEb = a*10^b

Priorities: First parenthesis are evaluated, then the one argument commands, then ←
   * and /
          and finaly + and −
All * must be put: 2*(3+4) and not 2(3+4)
                 _____
Example: Sin(Pi); V 10·Tan 27 −128 is 'SquareRoot(10*Tan(27))−128';
   1.26·10^3 is 1.26E3 = 1260
         See the
               tour
                for more examples.

1.35 Known bug

I have discovered one bug :

1)There are sometimes accuracy errors: Convert one meter in foot; copy that result ←
   in
the field (also the unit) and convert that in meters again. instead of one, you ←
   have
0.9999999999999...
decrease the accuracy when you read the final answer. Nearly one digit per ←
   conversion.

2?

Contact
 me if you find other ones.

1.36 Future

I'm working on the 2.0 version. It will feature:
* You will then be able to combine units (convert 4.8 inch per minute into
nautical miles per hour...)
* The UnitData format will be completly changed so I'll make a program to
  load the old format and save into the new format. I had to do this
  to allow the above possibilities
* More complete unit editor.
* Prefixes will be allowed for almost everything (exept for the level temperature ↩
   units)

The following will perhaps be done after:
* Remove the
Bug
* Use of Arexx for the Unit list in this guide
* Units combination: Inches per minute, for example (multiplication,
power, and divisions) and conversion of a unit in SI. Example:

$$kg \cdot m^2$$
$$1 \text{ cal} = 4.1868 \frac{}{s^2}$$

* Calculation ability between differents units (for example, 3 m + 2 in = ...)
* Possibility to make the window smaller up to the title bar's size (useful with
Arexx, when the window has no use).
* More complete menus for the Editor.
* MORE UNITS!!!! (
Contact
 me if you have ideas.
* I would like to make the Graphical user interface better, easier, and so on, but
I have no ideas to do it
CONTACT
 me for suggestions (Sorry, I
don't think it would be possible to use MUI)
* Informations about the units. (For example, tell that c is the light speed and ↩
   so on).
* More Arexx commands to make scripts shorter (create a unit in one time, for ↩
   example)
* If the workbench isn't interlaced, the bottom of the window isn't visible. I don ↩
   't know
how, but I will try to fix that.
* Duplicate all Arexx commands to have English and French names.
* Write a C version to allow execution on Pc, Mac, Linux, Unix,...
  (Idea given by Kay Hofmann)

1.37   History

```
                    * Something new
 ! Bug corrected
 _ Changed Something

Version 1.0:
 * First version.

Version 1.1:
 *
               Arexx
               port
 _ Became ShareWare 5-10 francs
 ! Removed the flash that appeared when the Temperature groupe was selected.
(The program had to redraw the whole window juste for removing the points on the
Level/Difference button).

Version 1.2:
 * Units edition
 * New units.
 * New Arexx commands
 * English translation available

Version 1.3 [4.apr.97]
 * More units
 * Created a keyfile
 * I had to make these changes twice because I accidentaly deleted the program...

Version 1.4 [10.apr.97] (sent to Aminet)
 ! Corrected
               nearly
                all bugs!
 _ The accuracy button changes now the number of digits instead of the number of  ←
    decimals.
 _ Units can now be moved by simply moving the mouse.

Version 1.4b [2.may.97] (sent to aminet)
 ! The Help key sometimes gave strange results because I changed the inteface  ←
    without
changing the object coordinates used by that function. Fixed.
 ! Mistake in that guide: t was the 1.4 and not the 1.3 which was send to Aminet  ←
    ;-)
 ! Another mistake: I translated the groups' names in the program, but I forgot to
remove the 'sorry' message in that guide, saying that I didn't translate them :-(
 ! Corrected some other stupid mistakes in that guide.

Version 1.5 [30.may.97] (sent to aminet)
 ! Corrected an awful bug which was the cause of a useless file requester  ←
    everytime the
convertor window appeared :-((
 * You can now select a new font for the buttons and labels (not the lists).
 * Font sensitive
 ! Corrected some mistakes in that guide.
```

1.38 Index

```
Shareware!

                  Surface
                  Switch (Arexx)

                  Convertisseur

                  Editor
                    T

                  Telephone

                  Température

                  Temps

                  Tour
                    U
Unité
 Commande Arexx

                  Convertisseur

                  Editeur
                  Unit
 in the window

                  Convertisseur

                  Editor

                  &calculation (menu)

                  List
                    V

                  Vitesse

                  Volume
                    W
Window

                  Convertisseur

                  Editor
                    X
  Y
  Z
Zéro

                  Arexx
                  Zero

                  Field
```

1.39   Contacts

```
                Address:
  Gamboni Maxime,
  Chemin de Rouvenne 8,
  CH-1800 Vevey
  Suisse

 Email:
  gamboni@fastnet.ch

 Phone:
   from Switzerland:
     021/921.55.01
   from la France:
     19~41 21/921.55.01
   other countries:
     I'm sorry, I can't give the complete list.

See
                Bug report
                 if you found a bug. First look at the
                Known bugs
                before sending one.
```

1.40   Necessary files

Here are the files which (should) come with 'Convertor':

```
 Convertisseur.iff   Picture used by this guide.
 Convertor.about     Text for "about"
 Convertor.guide     This file
 Convertor1.2        The executable
 Copy_of_UnitData    Copy of the UnitData file
 Install             Installer script
 Left4.grab          Left Arrow
 Right4.grab         Right Arrow
 Shareware           Shareware notice
 UnitData            The units and their definition
```

The four bolded files are absolutely necessary. The other may only make the ←
   program
to work bad.

1.41   Required configuration to use the program

```
* Workbench&Kickstart 2.0 or better
* Memory: Don't worry about that, it uses less than 512K.
* HD place: 281K for the libraries
        and 218K for the program and its files
```

```
     total: 500K
* An interlaced WB screen (It will be fixed soon)
```

1.42   Bug report

```
        * * * Bug report for Convertor 1.2 * * *

Name:_____

Address:_____

  _____

  _____

E-Mail:_____

[ ] I'm registered

Amiga: [ ] 500  [ ] 600  [ ] 1200  [ ] 3000
                                          [ ] _____
       [ ] 500+ [ ] 1000 [ ] 2000  [ ] 4000

Kickstart&Workbench: [ ] 2.0   [ ] 2.04  [ ] 2.1

                     [ ] 3.0   [ ] 3.1   [ ] ____

Memory: _____K Fast _____K Chip

Description of the bug and how to produce it:
```

```
Error Help: Number:____
            Text:_____
            Card:_____
            Object:_____
            (Type:_____)
            Script:_____
            (Type:_____)
            Line:___
```

1.43 Registration form

```
        * * * Registration form for Convertor 1.2 * * *

Name:_____

Address:_____

    _____

    _____

E-Mail:_____

Any Comment?




    [ ] Please send me the program by E-Mail
    [ ] Please send me the program by S-Mail (on a disk)

    [ ] I want to recieve (E-Mail only!) the updates

    I included a gift (in this form or in a separate packet)



    _____         _____
          Date                   Signature
```

1.44 Level and difference units

```
              Several peoples didn't understand the explanation I gave about  ↩
                  that.
Now there is only the Température group which enables the switch.
Here is a concrete example:
How many \textdegree{}F correspond to 10\textdegree{}C?
If you look at a thermometer which has both Celsius and Farhenreit degrees, you
will see that 10\textdegree{}C is in front of 50\textdegree{}F.
So 10\textdegree{}C equals to 50\textdegree{}F. How could there be another answer?
Now imagine that the temperature rises to 20\textdegree{}C, so an increase of 10\ ↩
    textdegree{}C.
The \textdegree{}F meter shows now 68\textdegree{}F, so an increase of 18\ ↩
    textdegree{}F.
So an increase of 10\textdegree{}C is equal to an increase of 18\textdegree{}F.

Conclusion: If you want to know the conversion of 10\textdegree{}C, in the first  ↩
    example (LEVEL),
```

the answer is 50\textdegree{}F; in the second example (DIFFERENCE), the answer is ↩
    18\textdegree{}F.

In the other groups, the switch Difference/Temperature is totally useless, so I ↩
    diabled it.
(A difference of, for example, 5 meters is 3.28 feet, and a length of 5 meters is ↩
    also
3.28 feet, because all units exept those in the temperature group have the same ↩
    zero
(0 meter is always equal to 0 foot).
In the temperature group, only the K and \textdegree{}R units have the same zeros.
This is why the other combinations that K<->\textdegree{}R in the temperature ↩
    group have differents results
if the switch is on Level or Difference.

I hope I was enough clear (see also the
                tour
                 for more examples).