

## APPENDIX 1.

Description of the lower graphic level of the complex

[P].1.1.1. Description of the interfaces of the graphic primitives, utilized for the writing graphic means.

All graphic programs of lower level PRADIS they are the subprograms for the common form (SUBROUTINE) of language FORTRAN, with exception of subprogram- function INDCOL

For the graphic primitives the upper left point of the screen it has coordinates 0,0, for the text - 1,1. Graphic coordinates are established in the pixels, text - in the symbols (line and columns). All text primitives can work in parallel with the graphic.

- 1) the programs of the installation of graphic regime, screen, the installation of palette, colors, style of the drawing

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| the name of | the argument of | the type of | the designation of |
| of the program of | of | of the argument of | of |
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- of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
| INITG of | 1 CODE of | INTEGER * of 4 | the initialization of the drawing of |
| of | of | of | if CODE= 0, successfully |
└ of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
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- of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
| SETCLR of | - | - | establishes color |
| of | of | of | the palette PRDIS of |
└ of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
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- of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
| FINIT of | - | - | completes graphic |
| of | of | of | the regime of |
└ of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
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- of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
| CLRSCR of | - | - | cleaning the screen of |
└ of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
| CLIP of | 1 LEFT of | INTEGER * of 4 | limits the region of |
| of | 2 TOP of | INTEGER * of 4 | of output to the screen of |
| of | e OF RIGHT of | INTEGER * of 4 | of |
| of | 4 BOTTOM of | INTEGER * of 4 | of |
└ of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
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- of - of - of - of - of - of - of - of - of - of - of - of ┘ of - of - of - of - of - of
| COLOR of | 1 NCOL of | INTEGER * of 4 | establishes current |
| of | of | of | the color of drawing on its |
| of | of | of | to the ordinal number of |

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| of | of | of | in the palette PRADIS of |
| of - of - of - of - of - of - of - of - of - of - of - of + of - of - of - of - of
- of - of - of - of - of - of - of + of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of + of - of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of |
| INDCOL of | 1 COL of | INTEGER * of 4 | determines ordinal |
| (OF FUNCTION of | of | of | the number of color in the palette of |
| of | of | of | PRADIS from the parameter of |
| of | of | of | of color, assigned of |
| of | of | of | by user into [opisa]- of |
| of | of | of | of NII $$RTNII - Scientific Research Institute in the input
language. |
| of | of | of | is used together |
| of | of | of | with in sequence COLOR of |
| of - of - of - of - of - of - of - of - of - of - of - of + of - of - of - of - of
- of - of - of - of - of - of - of + of - of - of - of - of - of - of - of - of - of
- of - of - of - of + of - of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of |
| LNSTYL of | 1 MASK of | INTEGER * of 4 | establishes mask, |
| of | of | of | utilized for |
| of | of | of | of the drawing of the line of |
| of - of - of - of - of - of - of - of - of - of - of - of + of - of - of - of - of
- of - of - of - of - of - of - of + of - of - of - of - of - of - of - of - of - of
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Program INITG establishes the elements of that named the COMMON- block/GRCONF/. Its description:

```
REAL * OF 8 RELYX

INTEGER * OF 4 XNMPXL, YNMPXL, XNMSMB, YNMSMB,
, NCOLOR, NMVPAG, MODE, IK,
, IS

COMMON/GRCONF/OF RELYX,
, XNMPXL, YNMPXL, XNMSMB, YNMSMB,
, NCOLOR, NMVPAG, MODE, IK,
, IS
```

Designation of the variables of COMMON- block GRCONF:

RELYX - ratio of the scale of image along the axis OY to  
to the scale of image along the axis OX for this type  
screen;

XNMPXL - quantity of accessible pixels for the data  
graphic screen along the X-axis;

YNMPXL - quantity of accessible pixels for the data  
graphic screen along the Y-axis;

XNMSMB - quantity of symbols of text for this screen on  
axis OX;

YNMSMB - quantity of symbols of text for this screen on  
axis OY;

NCOLOR - quantity of accessible colors;

NMVPAG - quantity of accessible [videostranits] (INITG always  
it attempts to ensure 2 pages of image, if  
this allows computer);

MODE - graphic mode of screen;

IK the -code of the last pressed key;

IS - scan- code of the last pressed key.

Program SETCLR establishes color palette PRADIS.

Numbers of colors in the palette PRADIS for the program of the  
installation  
the current color of drawing (COLOR):

```
0 - black is eighth dark gray
1- [jarkosiniy] 9 light blue
is 2nd the green 10 light green
3- the brown 11- whitish-blue
4- the [temnofioletovyj] 12- bright red
am 5th the [rozovokrasnyj] 13- [jarkofioletovyj]
' light brown 14- [jarkozheltyj]
" the light grey 15- white
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## 2) the programs of work with [videostranitsami]

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┌ of - of - of - of - of - of - of - of - of - of - of - of ┐ of - of - of - of - of
- of - of - of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of ┐
| the name of | the argument of | the type of | the designation of |
| of the program of | of | of the argument of | of |
└ of - of - of - of - of - of - of - of - of - of - of - of ┐ of - of - of - of - of
- of - of - of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of
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- of - of - of - of - of - of - of - of - of - of - of - of - of - of ┐
| AVISP of | - | - | is made the active of |
| of | of | of | the visible page of |
| of | of | of | of the image of |
└ of - of - of - of - of - of - of - of - of - of - of - of ┐ of - of - of - of - of
- of - of - of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of ┐
| ANVISP of | - | - | is made the active of |
| of | of | of | the invisible page of |
| of | of | of | of the image of |
└ of - of - of - of - of - of - of - of - of - of - of - of ┐ of - of - of - of - of
- of - of - of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of ┐
| VNVISP of | - | - | makes invisible |
| of | of | of | the page of that seen of |
| of | of | of | of the image of |
└ of - of - of - of - of - of - of - of - of - of - of - of ┐ of - of - of - of - of
- of - of - of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of
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- of - of - of - of - of - of - of - of - of - of - of - of - of - of ┐

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## e) the programs of [otrisovki] of the graphic primitives

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- of - of - of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of
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- of - of - of - of - of - of - of - of - of - of - of - of - of - of ┐
| the name of | the argument of | the type of | the designation of |
| of the program of | of | of the argument of | of |
└ of - of - of - of - of - of - of - of - of - of - of - of ┐ of - of - of - of - of
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- of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of ┐
| MOVEAB of | 1 XTEK of | INTEGER * of 4 | displacement is graphic -|
| of | 2 YTEK of | INTEGER * of 4 | GO of cursor into current |
| of | of | of | the position of the screen of |
└ of - of - of - of - of - of - of - of - of - of - of - of ┐ of - of - of - of - of
- of - of - of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of
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- of - of - of - of - of - of - of - of - of - of - of - of - of - of ┐
| DRWPXL of | 1 X | INTEGER * of 4 | Of [otrisovka] of the separate of |
| of | 2 Y of | INTEGER * of 4 | of pixel in T. of the X, Y of |
└ of - of - of - of - of - of - of - of - of - of - of - of ┐ of - of - of - of - of
- of - of - of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of ┐
| DRAWAB of | 1 XTEK of | INTEGER * of 4 | the drawing of line from |
| of | 2 YTEK of | INTEGER * of 4 | of the current position to |

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| of | of | of | of the given one of |
| of - of - of - of - of - of - of - of - of - of - of - of + of - of - of - of - of
- of - of - of - of - of - of - of + of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of + of - of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of |
| RECTAB of | 1 XA of | INTEGER * of 4 | sketches the rectangle of |
| of | 2 YA of | INTEGER * of 4 | with the sides, [paral]. |
| of | e XB of | INTEGER * of 4 | to the sides of screen. |
| of | 4 YB of | INTEGER * of 4 | if FLOOD = OF.TRUE ; |
| of | shch OF FLOOD of | LOGICAL of | is that the rectangle of |
| of | of | of | "is flooded". |
| of - of - of - of - of - of - of - of - of - of - of - of + of - of - of - of - of
- of - of - of - of - of - of - of + of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of + of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of |
| TRGLAB of | 1 XA of | INTEGER * of 4 | sketches the triangle of |
| of | 2 YA of | INTEGER * of 4 | (XA, YA-XB, YB of the coordinate of |
| of | e XB of | INTEGER * of 4 | of that limiting |
| of | 4 YB of | INTEGER * of 4 | of rectangle. With |
| of | shch OF FLOOD of | LOGICAL of | motion from XA, YA to |
| of | of | of | XB, YB the triangle of |
| of | of | of | remains to the left. Sides of |
| of | of | of | of triangle the parallel -|
| of | of | of | are to the sides of screen. |
| of | of | of | if FLOOD = OF.TRUE ; |
| of | of | of | is that the triangle of |
| of | of | of | "is flooded". |
| of - of - of - of - of - of - of - of - of - of - of - of + of - of - of - of - of
- of - of - of - of - of - of - of + of - of - of - of - of - of - of - of - of
- of - of - of - of - of + of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of |

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Programs of [otrisovki] of the graphic primitives  
(continuation)

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- of - of - of - of - of - of - of | of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of |
| the name of | the argument of | the type of | the designation of |
| of the program of | of | of the argument of | of |
| of - of - of - of - of - of - of - of - of - of - of - of | of - of - of - of - of
- of - of - of - of - of - of - of | of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of | of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of |
| TRGLAN of | 1 XA of | INTEGER * of 4 | sketches the triangle of |
| of | 2 YA of | INTEGER * of 4 | of common form. |
| of | e XB of | INTEGER * of 4 | of |
| of | 4 YB of | INTEGER * of 4 | if FLOOD = OF.TRUE ; |
| of | shch XC of | INTEGER * of 4 | that is the triangle of |
| of | ' YC of | INTEGER * of 4 | "is flooded". |
| of | " FLOOD of | LOGICAL of | of |
| of - of - of - of - of - of - of - of - of - of - of - of | of - of - of - of - of
- of - of - of - of - of - of - of | of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of | of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of |
| CIRCLE of | 1 XC of | INTEGER * of 4 | sketches on the screen dist. of |
| of | 2 YC of | INTEGER * of 4 | with a radius of R with the center of |
| of | e R of | INTEGER * of 4 | at point XC, YC. |
| of | 4 FLOOD of | LOGICAL of | if FLOOD = OF.TRUE ; |
| of | of | of | that is sketched circle. |
| of - of - of - of - of - of - of - of - of - of - of - of | of - of - of - of - of
- of - of - of - of - of - of - of | of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of | of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of |
| ELLIPS of | 1 LEFT of | INTEGER * of 4 | sketches on the screen of |
| of | 2 TOP of | INTEGER * of 4 | the ellipsis of |
| of | e OF RIGHT of | INTEGER * of 4 | of |
| of | 4 BOTTOM of | INTEGER * of 4 | of |
| of | shch OF FLOOD of | LOGICAL of | of |
| of - of - of - of - of - of - of - of - of - of - of - of | of - of - of - of - of
- of - of - of - of - of - of - of | of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of | of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of |
| CURSOR of | 1 XTEK of | INTEGER * of 4 | the displacement of the text of |
| of | 2 YTEK of | INTEGER * of 4 | of cursor into assigned |
| of | of | of | the position of |
| of - of - of - of - of - of - of - of - of - of - of - of | of - of - of - of - of
- of - of - of - of - of - of - of | of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of | of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of |
| OUTTXT of | 1 STRING of | CHAR * (*) of | the press the text line of |
| of | 2 N of | INTEGER * of 4 | with the length of N of |
| of - of - of - of - of - of - of - of - of - of - of - of | of - of - of - of - of
- of - of - of - of - of - of - of | of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of | of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of |

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4) additional programs for the work in  
text regime (they are not used)

directly in PK PRADIS)

┌ of - of - of - of - of - of - of - of - of - of - of - of ┐ of - of - of - of - of  
- of - of - of - of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of  
- of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of - of  
- of - of - of - of - of - of - of - of - of - of - of - of - of - of ┐  
| the name of | the arguments of | type to [argume] of | the designation of |  
| of the program of | of | of | of |  
└ of - of - of - of - of - of - of - of - of - of - of - of ┐ of - of - of - of - of  
- of - of - of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of  
- of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of  
- of - of - of - of - of - of - of - of - of - of - of - of - of - of ┐  
| SCOLFN of | 1 COLOR of | INTEGER \* of | establishes current |  
| of | of | of | the color of the background of |  
└ of - of - of - of - of - of - of - of - of - of - of - of ┐ of - of - of - of - of  
- of - of - of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of  
- of - of - of - of ┐ of - of - of - of - of - of - of - of - of - of - of  
- of - of - of - of - of - of - of - of - of - of - of - of - of - of ┐



[P]1.2. Obtaining in the program of the user of the code  
the pressed key.

For interactive obtaining of the code of the pressed key  
is used the call of program INKEY:

```
CALL INKEY (IK, IS),
```

where IK and IS - respectively, the code of the pressed key and  
its scan- code. Variable IK and IS - INTEGER \* 2.

One should bear in mind that after the completion of the current step  
integration the buffer of keyboard is cleaned.

Obtaining the code of the key and scan- code is guaranteed  
the following keys (if they there is on the keyboard of computer):

```

┌ of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of
| of the key for | the code of the key for | the scan- code of |
└ of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of
- of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of
| of | of | of |
| of <ENTER> of | of 28 | of 13 |
| of | of | of |
| of <ALT-C> of | of 46 | of 0 |
| of | of | of |
| of <ALT-R> of | of 19 | of 0 |
| of | of | of |
| of <F1> of | of 59 | of 0 |
| of | of | of |
| of <F2> of | of 60 | of 0 |
| of | of | of |
| of <F3> of | of 61 | of 0 |
| of | of | of |
| of <Page Of up> of | of 73 | of 0 |
| of | of | of |
| of <Page Of down> of | of 81 | of 0 |
| of | of | of |
└ of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of - of
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```

Programs of user, which are used in the composition  
computational nucleus, they must not call program INKEY  
directly. In order to obtain code and scan- code of the pressed key,  
it is necessary to use variable IK and IS COMMON of block GRCONF.

P 1- shch