INTERNATIONAL STANDARD

ISO/IEC 9592-3

First edition
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AMENDMENT 1
1992-09-01

Information processing systems — Computer graphics — Programmer's Hierarchical Interactive Graphics System (PHIGS) —

Part 3 :
Clear-text encoding of archive file

AMENDMENT 1

Systèmes de traitement de l'information — Infographie — Interface de programmation du système graphique hiérarchisé (PHIGS) —

Partie 3 : Codage mode texte en clair du fichier d'archive

AMENDEMENT 1

Reference number
ISO/IEC 9592-3 : 1989/Amd.1 : 1992 (E)

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Amendment 1 to International Standard ISO/IEC 9592-3 : 1989 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

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Introduction

This amendment specifies the additions and changes to ISO/IEC 9592-3 to support the structure elements specified in ISO/IEC 9592-4. A clear text encoding is specified for each of the structure element types specified in ISO/IEC 9592-4.

Unless otherwise specified, all references in this amendment refer to ISO/IEC 9592-3.

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4.2.4.5 Derived types

Add the following:

```
COLRCURVE          ::= <LEFT PAREN><OPTSEP>
                       <I:ORDER> <SEP>
                       <RLIST:KNOTS> <SEP>
                       <RATIONAL | NONRATIONAL> <SEP>
                       <I:COLOUR TYPE> <SEP>
                       <COLRVLIST:CONTROL_POINTS>
                       <OPTSEP> <RIGHT PAREN>

COLRSURF           ::= <LEFT PAREN><OPTSEP>
                       <I:U_ORDER> <SEP>
                       <I:V_ORDER> <SEP>
                       <RLIST:U_KNOTS> <SEP>
                       <RLIST:V_KNOTS> <SEP>
                       <RATIONAL | NONRATIONAL> <SEP>
                       <I:COLOUR_TYPE> <SEP>
                       <COLRVLISTS:CONTROL_POINTS>
                       <OPTSEP> <RIGHT PAREN>
```


NOTE: Each COLRVLIST contains control points along the *u* dimension.

```
COLRV              ::= < <I:COLOUR_INDEX>
                       | <COORDLIST:COLOUR_COORDINATES>
                       >

COLRVLIST          ::= <LEFT PAREN> <OPTSEP>
                       < <COLRV> <<SEP> <COLRV>>* >o
                       <OPTSEP> <RIGHT PAREN>

COLRVLISTS         ::= <LEFT PAREN> <OPTSEP>
                       < <COLRVLIST> <<SEP> <COLRVLIST>>* >o
                       <OPTSEP> <RIGHT PAREN>
```

```
COLRVROWS                ::= COLRVLISTS

COORDLIST                ::= <LEFT PAREN> <OPTSEP>
                             <COORD> << SEP> <COORD>>*
                             <OPTSEP> <RIGHT PAREN>

CURVEAPPROXDATAREC       ::= <LEFT PAREN> <OPTSEP>
                             <<I:COUNT>
                             | <R:APPROXIMATION_VALUE>
                             | <S:TYPE_DEPENDENT_DATA>>o
                             <OPTSEP> <RIGHT PAREN>>

DATAMAPPINGDATAREC       ::= <LEFT PAREN> <OPTSEP>
                             <
                             <DATAMAPPINGDATAREC1>
                             | <DATAMAPPINGDATAREC2>
                             | <DATAMAPPINGDATAREC3>
                             | <DATAMAPPINGDATAREC4>
                             | <DATAMAPPINGDATAREC5>
                             | <S:METHOD_DEPENDENT_DATA>
                             >o
                             <OPTSEP><RIGHT PAREN>

DATAMAPPINGDATAREC1      ::= <SOURCESELECTORLIST:SELECTOR>

DATAMAPPINGDATAREC2      ::= <SOURCESELECTORLIST:SELECTOR> <SEP>
                             <I:INDEX> <SEP>
                             <R:LOWER_LIMIT> <SEP>
                             <R:UPPER_LIMIT> <SEP>
                             <I:COLOUR_TYPE> <SEP>
                             <CORLVLIST:COLOUR_LIST>

DATAMAPPINGDATAREC3      ::= <SOURCESELECTORLIST:SELECTOR> <SEP>
                             <I:INDEX> <SEP>
                             <RLIST:RANGE_BOUNDARIES> <SEP>
                             <I:COLOUR_TYPE> <SEP>
                             <CORLVLIST:COLOUR_LIST>

DATAMAPPINGDATAREC4      ::= <SOURCESELECTORLIST:SELECTOR> <SEP>
                             <I:INDEX_1> <SEP>
                             <I:INDEX_2> <SEP>
                             <R:Ra_LOWER_LIMIT> <SEP>
                             <R:Ra_UPPER_LIMIT> <SEP>
                             <R:Rb_LOWER_LIMIT> <SEP>
                             <R:Rb_UPPER_LIMIT> <SEP>
                             <I:COLOUR_TYPE> <SEP>
                             <CORLVLISTS:COLOUR_LISTS>
```

DATAMAPPINGDATAREC5 ::= <SOURCESELECTORLIST:SELECTOR> <SEP>
<I:INDEX_1> <SEP> <I:INDEX_2> <SEP>
<RLISTS:Ra_RANGE_BOUNDARIES> <SEP>
<RLISTS:Rb_RANGE_BOUNDARIES> <SEP>
<I:COLOUR_TYPE> <SEP>
<CORLVLISTS:COLOUR_LISTS>

DATASURF ::= <LEFT PAREN> <OPTSEP>
<I:U_ORDER> <SEP>
<I:V_ORDER> <SEP>
<RLIST:U_KNOTS> <SEP>
<RLIST:V_KNOTS> <SEP>
<RATIONAL | NONRATIONAL> <SEP>
<RLISTSLIST:CONTROL_POINTS>
<OPTSEP> <RIGHT PAREN>

NOTE: Each RLIST is a single control point. Each RLISTS contains control points along the *u* dimension.

DATASURFLIST ::= <LEFT PAREN> <OPTSEP>
<DATASURF> <<SEP> <DATASURF>>*
<OPTSEP> <RIGHT PAREN>

EDGEDATAFLAG ::= <
NONE
| EDGE_VISIBILITY_FLAGS
>

EDGEFLAG ::= < OFF | ON >

EDGEFLAG2 ::= <LEFT PAREN> <OPTSEP>
<EDGEFLAG> <SEP> <EDGEFLAG>
<OPTSEP> <RIGHT PAREN>

EDGEFLAG2ROW ::= <LEFT PAREN> <OPTSEP>
< <EDGEFLAG2> <<SEP> <EDGEFLAG2>>* >o
<OPTSEP> <RIGHT PAREN>

EDGEFLAG3 ::= <LEFT PAREN> <OPTSEP>
<EDGEFLAG> <SEP> <EDGEFLAG> <SEP> <EDGEFLAG>
<OPTSEP> <RIGHT PAREN>

EDGEFLAG3LIST ::= <LEFT PAREN> <OPTSEP>
< <EDGEFLAG3> <<SEP> <EDGEFLAG3>>* >o
<OPTSEP> <RIGHT PAREN>

EDGEFLAGLIST ::= <LEFT PAREN> <OPTSEP>
< <EDGEFLAG> <<SEP> <EDGEFLAG>>* >o
<OPTSEP> <RIGHT PAREN>

EDGEFLAGLISTS ::= <LEFT PAREN> <OPTSEP>
< <EDGEFLAGLIST> <<SEP> <EDGEFLAGLIST>>* >o
<OPTSEP> <RIGHT PAREN>

```
EDGEFLAGLISTSLIST       ::= <LEFT PAREN> <OPTSEP>
                            < <EDGEFLAGLISTS> <<SEP> <EDGEFLAGLISTS>>* >o
                            <OPTSEP> <RIGHT PAREN>

EDGEFLAGROW             ::= <EDGEFLAGLIST>

FACETDATA               ::= <LEFT PAREN> <OPTSEP>
                            <COLRV>o
                             <<SEP> <V3:UNIT_NORMAL>>o
                             <<SEP> <RLIST:DATA_MAPPING_DATA>>o
                            <OPTSEP> <RIGHT PAREN>

FACETDATAFLAG           ::= <
                            NONE
                            | FACET_COLR
                            | FACET_NORMAL
                            | FACET_DATA
                            | FACET_COLR_NORMAL
                            | FACET_COLR_DATA
                            | FACET_NORMAL_DATA
                            | FACET_COLR_NORMAL_DATA
                            >

FACETDATALIST           ::= <LEFT PAREN> <OPTSEP>
                            < <FACETDATA> <<SEP> <FACETDATA>>* >o
                            <OPTSEP> <RIGHT PAREN>

FACETDATALISTS          ::= <LEFT PAREN> <OPTSEP>
                            < <FACETDATALIST> <<SEP> <FACETDATALIST>>* >o
                            <OPTSEP> <RIGHT PAREN>

FACETDATAROW            ::= <FACETDATALIST>

GCOLR                   ::= <I:COLOUR_TYPE> <SEP> <COLRV>

INT3                    ::= <LEFT PAREN> <OPTSEP>
                            <I> <SEP> <I> <SEP> <I>
                            <OPTSEP> <RIGHT PAREN>

INT3LIST                ::= <LEFT PAREN> <OPTSEP>
                            < <INT3> <<SEP> <INT3>>* >o
                            <OPTSEP> <RIGHT PAREN>>

INT3LISTS               ::= <LEFT PAREN> <OPTSEP>
                            < <INT3LIST> <<SEP> <INT3LIST>>* >o
                            <OPTSEP> <RIGHT PAREN>>

INTLIST                 ::= <LEFT PAREN> <OPTSEP>
                            < <I> <<SEP> <I>>* >o
                            <OPTSEP> <RIGHT PAREN>>
```

```
INTLISTS                    ::= <LEFT PAREN> <OPTSEP>
                                < <INTLIST> <<SEP> <INTLIST>>* >o
                                <OPTSEP> <RIGHT PAREN>>

INTLISTSLIST                ::= <LEFT PAREN> <OPTSEP>
                                < <INTLISTS> <<SEP> <INTLISTS>>* >o
                                <OPTSEP> <RIGHT PAREN>>

P4                          ::= <
                                <POINT4>
                                | <LEFT PAREN> <OPTSEP> <POINT4> <OPTSEP><RIGHT PAREN>
                                >

POINT4                      ::= <COORD:wX> <SEP>
                                <COORD:wY> <SEP>
                                <COORD:wZ> <SEP>
                                <COORD:w>

POINTLIST4                  ::= < <P4:POINT> <<SEP> <P4:POINT>>* >o

PARAMSURFCHARACDATAREC      ::= <LEFT PAREN> <OPTSEP>
                                <
                                <PARAMSURFCHARACDATAREC3>
                                | <PARAMSURFCHARACDATAREC4>
                                | <S:TYPE_DEPENDENT_DATA>
                                >o
                                <OPTSEP><RIGHT PAREN>

PARAMSURFCHARACDATAREC3     ::= <UNIFORM | NONUNIFORM> <SEP>
                                <I:U_COUNT> <SEP> <I:V_COUNT>
                                <OPTSEP> <RIGHT PAREN>

PARAMSURFCHARACDATAREC4     ::= <P3:ORIGIN_POINT> <SEP>
                                <V3:DIRECTION_VECTOR> <SEP>
                                <RLIST:PARAMETERS>

REFLPROPSDATAREC            :== <LEFT PAREN> <OPTSEP>
                                <
                                <REFLDATAREC1>
                                | <S:METHOD_DEPENDENT_DATA>
                                >o
                                <OPTSEP><RIGHT PAREN>

REFLPROPSDATAREC1           ::= <R:AMBIENT_REFLECTION_COEFFICIENT> <SEP>
                                <R:DIFFUSE_REFLECTION_COEFFICIENT> <SEP>
                                <R:SPECULAR_REFLECTION_COEFFICIENT> <SEP>
                                <GCOLR:SPECULAR_COLOUR><SEP>
                                <R:SPECULAR_EXPONENT>
```

```
RLIST                    ::= <LEFT PAREN> <OPTSEP>
                             < <R> <<SEP> <R>>* >o
                             <OPTSEP> <RIGHT PAREN>

RLISTS                   ::= <LEFT PAREN> <OPTSEP>
                             < <RLIST> <<SEP> <RLIST>>* >o
                             <OPTSEP> <RIGHT PAREN>

RLISTSLIST               ::= <LEFT PAREN> <OPTSEP>
                             < <RLISTS> <<SEP> <RLISTS>>* >o
                             <OPTSEP> <RIGHT PAREN>

SOURCESELECTOR           ::= <
                              COLOUR_ASPECT
                             | VERTEX_COLOUR
                             | VERTEX_DATA
                             | FACET_COLOUR
                             | FACET_DATA
                             >

SOURCESELECTORLIST       ::= <LEFT PAREN> <OPTSEP>
                             < <SOURCESELECTOR><<SEP><SOURCESELECTOR>>* >o
                             <OPTSEP> <RIGHT PAREN>

SURFAPPROXDATAREC        ::= <LEFT PAREN> <OPTSEP>
                             <<I:U_COUNT> <SEP> <I:V_COUNT>
                             | <R:APPROXIMATION_VALUE>
                             | <R:U_APPROXIMATION_VALUE> <SEP>
                               <R:V_APPROXIMATION_VALUE>
                             | <S:TYPE_DEPENDENT_DATA>>o
                             <OPTSEP> <RIGHT PAREN>>

TRIMCURVE                ::= <LEFT PAREN> <OPTSEP>
                             <I:APPROXIMATION_TYPE> <SEP>
                             <CURVEAPPROXDATAREC:DATA_RECORD>
                             <OFF | ON:EDGE_FLAG> <SEP>
                             <I:ORDER> <SEP>
                             <RLIST:KNOTS> <SEP>
                             <R:TMIN> <SEP> <R:TMAX> <SEP>
                             <
                             <RATIONAL <SEP>
                                 <POINTLIST3:CONTROL_POINTS>>
                             | <NONRATIONAL <SEP>
                                 <POINTLIST2:CONTROL_POINTS>>
                             >
                             <OPTSEP> <RIGHT PAREN>

TRIMLOOP                 ::= <LEFT PAREN> <OPTSEP>
                             <TRIMCURVE> <<SEP> <TRIMCURVE>>*
                             <OPTSEP> <RIGHT PAREN>
```

```
TRIMLOOPLIST            ::= <LEFT PAREN> <OPTSEP>
                            <TRIMLOOP> <<SEP> <TRIMLOOP>>*
                            <OPTSEP> <RIGHT PAREN>

VERTEXDATA2             ::= <LEFT PAREN> <OPTSEP>
                            <P2:POINT>
                            <<SEP> <COLRV>>o
                            <<SEP> <V3:UNIT_NORMAL>>o
                            <<SEP> <RLIST:DATA_MAPPING_DATA>>o
                            <OPTSEP> <RIGHT PAREN>

VERTEXDATA2LIST         ::= <LEFT PAREN> <OPTSEP>
                            < <VERTEXDATA2> <<SEP> <VERTEXDATA2>>* >o
                            <OPTSEP> <RIGHT PAREN>

VERTEXDATA2LISTS        ::= <LEFT PAREN> <OPTSEP>
                            < <VERTEXDATA2LIST> <<SEP> <VERTEXDATA2LIST>>* >o
                            <OPTSEP> <RIGHT PAREN>

VERTEXDATA3             ::= <LEFT PAREN> <OPTSEP>
                            <P3:POINT>
                            <<SEP> <COLRV>>o
                            <<SEP> <V3:UNIT_NORMAL>>o
                            <<SEP> <RLIST:DATA_MAPPING DATA>>o
                            <OPTSEP> <RIGHT PAREN>

VERTEXDATA3LIST         ::= <LEFT PAREN> <OPTSEP>
                            < <VERTEXDATA3> <<SEP> <VERTEXDATA3>>* >o
                            <OPTSEP> <RIGHT PAREN>

VERTEXDATA3LISTS        ::= <LEFT PAREN> <OPTSEP>
                            < <VERTEXDATA3LIST> <<SEP> <VERTEXDATA3LIST>>* >o
                            <OPTSEP> <RIGHT PAREN>

VERTEXDATAFLAG          ::= <
                            COORD
                            | COORD_COLR
                            | COORD_NORMAL
                            | COORD_DATA
                            | COORD_COLR_NORMAL
                            | COORD_COLR_DATA
                            | COORD_NORMAL_DATA
                            | COORD_COLR_NORMAL_DATA
                            >

VERTEXDATAPL3           ::= <LEFT PAREN> <OPTSEP>
                            <P3:POINT>
                            <<SEP> <COLRV>>o
                            <OPTSEP> <RIGHT PAREN>
```