StreamDefs.mesa 2-Sep-78 13:58:17

-- StreamDefs.Mesa Edited by Sandman on April 10, 1978 10:59 AM

DIRECTORY
AltoDefs: FROM "altoadefs",
AltoFileDefs: FROM "altofiledefs",
SegmentDefs: FROM "segmentdefs",
RectangleDefs: FROM "rectangledefs";

StreamDefs: DEFINITIONS = BEGIN

KeyBufChars: PRIVATE INTEGER = 80;
StreamHandle: TYPE = POINTER TO StreamObject;
KeyboardHandle: TYPE = POINTER TO Keyboard StreamObject;
DisplayHandle: TYPE = POINTER TO Display StreamObject;
DiskHandle: TYPE = POINTER TO Disk StreamObject;
OtherStreamHandle: TYPE = POINTER TO Other StreamObject;

StreamObject: TYPE = RECORD [reset: PROCEDURE [StreamHandle],
get: PROCEDURE [StreamHandle] RETURNS [UNSPECIFIED],
putback: PROCEDURE [StreamHandle, UNSPECIFIED],
endof: PROCEDURE [StreamHandle] RETURNS [BOOLEAN],
destroy: PROCEDURE [StreamHandle],
body: PRIVATE SELECT type: PUBLIC • FROM
  Keyboard => [in, out: CARDINAL,
    buffer: PACKED ARRAY [0..KeyBufChars] OF CHARACTER],
  Display => [options: PUBLIC DSOptions,
    charx: RectangleDefs.xCoord,
    TABindex: [0..9],
    chary: RectangleDefs.yCoord,
    link: PUBLIC DisplayHandle,
    pfont: PUBLIC RectangleDefs.FAptr,
    rectangle: PUBLIC RectangleDefs.Rptr,
    lineheight: PUBLIC CARDINAL,
    line: PUBLIC CARDINAL,
    TABs: ARRAY [0..9] OF CARDINAL],
  Disk => [eof, dirty: BOOLEAN,
    read, write, append: PUBLIC BOOLEAN,
    unit: [1..2],
    index, size: CARDINAL,
    getOverflow: PROCEDURE [StreamHandle],
    savedGet: PROCEDURE [StreamHandle] RETURNS [UNSPECIFIED],
    putOverflow: PROCEDURE [StreamHandle],
    savedPut: PROCEDURE [StreamHandle, UNSPECIFIED],
    page: AltoDefs.PageNumber,
    char: CARDINAL,
    buffer: RECORD [SELECT OVERLAID • FROM
      byte => [byte: POINTER TO PACKED ARRAY [0..0] OF AltoDefs.BYTE],
      word => [word: POINTER TO ARRAY [0..0] OF WORD],
      ENDCASE],
      file: PUBLIC SegmentDefs.FileHandle,
      das: ARRAY {last, current, next} OF AltoFileDefs.vDA],
    Other => [data: PUBLIC POINTER],
    ENDCASE]],
StreamError: SIGNAL [stream:StreamHandle, error:StreamErrorCode];

StreamErrorCode: TYPE = [StreamType, StreamAccess, StreamOperation,
  StreamPosition, StreamEnd, StreamBug];

-- extensions applicable to keyboard streams
CreateKeyStream: PROCEDURE RETURNS [KeyboardHandle];
GetDefaultKey, GetCurrentKey: PROCEDURE RETURNS [KeyboardHandle];
OpenKeyStream, CloseKeyStream: PROCEDURE [stream:StreamHandle];
CursorTrack: PROCEDURE [BOOLEAN];
ControlDELtyped: PROCEDURE RETURNS [BOOLEAN];
ResetControlDEL: PROCEDURE;
KeyStreams: PROGRAM;

-- extensions applicable to display streams

-- Display Stream options field definitions

DSOptions: TYPE • RECORD [
  StopRight: BOOLEAN, -- discard rather than wrap line
  StopBottom: BOOLEAN, -- discard rather than scroll
  NoteLineBreak: BOOLEAN, -- SIGNAL on line breaks
  NoteScrolling: BOOLEAN]; -- SIGNAL on Scroll

GetDefaultDisplayStream: PROCEDURE RETURNS [DisplayHandle];
GetDisplayStreamList: PROCEDURE RETURNS [DisplayHandle];
ClearCurrentLine: PROCEDURE [stream:StreamHandle];
ClearDisplayLine: PROCEDURE [stream:StreamHandle, line:CARDINAL];
ClearDisplayChar: PROCEDURE [stream:StreamHandle, char:CHARACTER];
CreateDisplayStream: PROCEDURE [rectangle:RectangleDefs.Rptr] RETURNS [DisplayHandle];

-- display stream procedures used by Window stuff

ScrollDisplay: PROCEDURE [ds:DisplayHandle, char:CHARACTER];
SetDisplayLine: PROCEDURE [ds:DisplayHandle, line, pos:CARDINAL];
WriteDisplayChar: PROCEDURE [stream:StreamHandle, char:CHARACTER];

-- extensions applicable to disk streams

StreamIndex: TYPE • RECORD [
  page: AltoDefs.PageNumber,
  byte: CARDINAL];

AccessOptions: TYPE • SegmentDefs.AccessOptions;
  Read: AccessOptions = SegmentDefs.Read;
  Write: AccessOptions = SegmentDefs.Write;
  Append: AccessOptions = SegmentDefs.Append;
  -- Delete: AccessOptions = SegmentDefs.Delete;

DefaultAccess: AccessOptions = SegmentDefs.DefaultAccess;

NewByteStream, NewWordStream: PROCEDURE [name: STRING, access: AccessOptions]
  RETURNS [DiskHandle];
CreateByteStream, CreateWordStream: PROCEDURE [
  file: SegmentDefs.FileHandle, access: SegmentDefs.AccessOptions]
  RETURNS [DiskHandle];
OpenDiskStream, CloseDiskStream: PROCEDURE [stream: StreamHandle];
CleanupDiskStream, TruncateDiskStream: PROCEDURE [stream: StreamHandle];
FileLength: PROCEDURE [stream: StreamHandle] RETURNS [StreamIndex];
GetFA: PROCEDURE [stream:StreamHandle, fa:POINTER TO AltoFileDefs.FA];
JumpToFA: PROCEDURE [stream:StreamHandle, fa:POINTER TO AltoFileDefs.FA];
ReadBlock, WriteBlock: PROCEDURE [stream:StreamHandle, address:POINTER, words:CARDINAL]
  RETURNS [CARDINAL];

-- StreamIndex Stuff

GetIndex: PROCEDURE [stream: StreamHandle] RETURNS [StreamIndex];
SetIndex: PROCEDURE [stream: StreamHandle, index: StreamIndex]
  RETURNS [StreamIndex];
NormalizeIndex: PROCEDURE [index: StreamIndex] RETURNS [StreamIndex];
ModifyIndex: PROCEDURE [index: StreamIndex, change: INTEGER] RETURNS [StreamIndex];
EqualIndex: PUBLIC PROCEDURE [i1, i2: StreamIndex] RETURNS [BOOLEAN];
GrEqualIndex: PUBLIC PROCEDURE [i1, i2: StreamIndex] RETURNS [BOOLEAN];
GrIndex: PUBLIC PROCEDURE [i1, i2: StreamIndex] RETURNS [BOOLEAN];

END.