```
{ Definition to access to MXD objects for MXD-V4.1.0.0 }

type $lsq_coef  is [lsq_vexp,baselex] float,
     $int_cte   is [no_lsq,readonly,baselex] integer,
     $int_fix   is [no_lsq]         integer,
     $word_int  is [word]           integer,
     $byte_int  is [byte]           integer,
     $flt_fix   is [no_lsq]           float,
     lsq_var    is [lsq_var]          float,
     sfloat     is [sigma]            float,
     data_field is [dat_field]        float,
     lsq_parm   is [lsq_parm]   wild_object,
     trans_mat  is       array[12] of float;

begin
  include $sys_mxdlib||'mxd_lsq.mxd_env';

  item lsqblock:I$lsqblock is
       dmp*, mrq*: $flt_fix
  end;

  item item_block phase:I$phase is
       scale, aa, bb*, cc*, al*, be*, ga*: float
  end;

  item wavevect( rat*: $int_cte ):I$wavevect is
       qx*, qy*, qz*: float
  end for phase;

  item npoladir:I$npoladir is
       hx*, hy*, hz*, efu*, efd*, f2_corr*: float
  end for phase;

  item symtry:-I$symtry is
       m11, m12, m13: $int_fix; t1: $flt_fix;
       m21, m22, m23: $int_fix; t2: $flt_fix;
       m31, m32, m33: $int_fix; t3: $flt_fix
  end for phase;

  item item_block atom_group:I$atmgroup is
       transf*: trans_mat
  end for phase, atom_group;

  item atom:I$atom is
       rdf, idf*,
       pop,
       x, y, z,
       b11, b22*, b33*, b12*, b23*, b31*: float
  end for phase, atom_group;

  item catom = atom:I$catom;

  item moment( atm: atom; qv*: wavevect ):I$moment is
       frm,
       rmx, rmy, rmz,
       imx*, imy*, imz* : float
  end for phase, atom_group;

  item pmoment = moment:I$moment for phase;


  item mdsdsp( atm: atom; qv: wavevect ):I$mdsdsp is
       rux*, ruy*, ruz*,
       iux*, iuy*, iuz* : float
  end for phase, atom_group;

  item pmdsdsp = mdsdsp:I$mdsdsp for phase;


  item lsq_constraint:I$constraint is
       calc, obs, sg, we*: float
  end;


  lsq_directive center:D$center for phase;
  lsq_directive lattice( string ):D$lattice for phase;
  lsq_directive space_group( string ):D$space_group for phase;
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  lsq_directive fixed( lsq_var& *):D$fixed;
  lsq_directive unfixed( lsq_var& *):D$unfixed;
  lsq_directive limits( float, float, lsq_var& *):D$limits;

  lsq_directive lsq_option[ float, float ]:D$option;
  lsq_directive parm_display( lsq_parm& * ):D$dsplpar;


  $lsq_coef       $h:C$h,       $k:C$k,       $l:C$l,
                $rh:C$rh,     $rk:C$rk,     $rl:C$rl,
                $hh:C$hh,     $kk:C$kk,     $ll:C$ll, $sithsl:C$sithsl,
                $sh:C$sh,     $sk:C$sk,     $sl:C$sl,
                $qx:C$qx,     $qy:C$qy,     $qz:C$qz,
                $hx:C$hx,     $hy:C$hy,     $hz:C$hz,
              $fnr:C$fnr,   $fni:C$fni,
            $fmxr:C$fmxr, $fmyr:C$fmyr, $fmzr:C$fmzr,
            $fmxi:C$fmxi, $fmyi:C$fmyi, $fmzi:C$fmzi,
          $npola:C$npola,   $obs:C$obs,   $sig:C$sig, $weight:C$weight,

            $calc:V$dat$calc,   $fn2:V$dat$fn2,   $fm2:V$dat$fm2, $f2pola:V$dat$f2pola;



  item hkl_xf2( scale*, lambda*, fn2_corr*, fm2_corr*, dyn_weight*: float ):I$dathkl_xf2 data is
       ih, ik, il, nq*, mul*, npola*: integer;
       nvw*: wavevect; npdir*: npoladir; npha*: phase;
       isent*?, selnb*: integer;
       obs, sg*, we*: float
  end + 16;

  item hkl_xsf  = hkl_xf2:I$dathkl_xsf;
  item hkl_xray = hkl_xf2:I$dathkl_xray;

  item hkl_nf2  = hkl_xf2:I$dathkl_nf2;
  item hkl_nsf  = hkl_xf2:I$dathkl_nsf;
  item hkl_nray = hkl_xf2:I$dathkl_nray;

  $lsq_coef  $x0:C$y_x, $yobs:C$y_obs, $ysg:C$y_sg, $ywe:C$y_weight;

  item curve:I$datcurve data is
       x0: float;
       isent*?: integer;
       yobs, sg*, we*: float
  end + 16;


  $lsq_coef $lchi2:C$lchi2, $cchi2:C$cchi2, $lmaxf:C$lmaxf, $cmaxf:C$cmaxf;


end;

lsqblock^      c$lsqblock:-1;
phase^            c$phase:-1;
wavevect^      c$wavevect:-1;
npoladir^      c$npoladir:-1;
symtry^          c$symtry:-1;
atom_group^  c$atom_group:-1;
atom^             c$atom:-1;
catom^           c$catom:-1;
moment^          c$moment:-1;
mdsdsp^          c$mdsdsp:-1;


$int_cte no     :=  0, yes    :=  1, always :=  2;

{ End of mxd environment file }
```