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changes to: (IL:FUNCTIONS CONDITIONS::DEFAULT-RESTART-REPORT)

previous date: 16-May-90 12:20:11 {PELE:MV:ENVOS}<LISPCORE>SOURCES>CL-ERROR.;2

Read Table: XCL

Package: XEROX-COMMON-LISP

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(IL:RPAQQ **IL:CL-ERRORCOMS**

((IL:COMS

;; Internal stuff.

```
(IL:FUNCTIONS CONDITIONS::EXPAND-WITH-COLLECTION-SITES CONDITIONS::WITH-COLLECTION-SITES)
(IL:FUNCTIONS DEFAULT-PROCEED-REPORT CONDITIONS::DEFAULT-RESTART-REPORT)
(IL:FUNCTIONS IL:WITH-GENSYMS IL:WITH-ERR-LOOP-VARS IL:STRIP-KEYWORDS IL:MAKE-REPORT-FUNCTION
CONDITIONS::NORMALIZE-SLOT-DESCRIPTION IL:CHECK-*CASE-SELECTOR
IL:COLLECT-CASE-SELECTORS IL:%SUFFIX-SYMBOL IL:PROCEED-ARG-COLLECTOR
SI::EXPAND-CONDITION-CASE SI::PROCESS-PROCEED-KEYWORDS SI::SPLIT-PROCEED-CLAUSES
SI::EXPAND-PROCEED-CASE CONDITIONS::PARSE-RESTART-CASE
CONDITIONS::CONVERT-RESTART-CASES CONDITIONS::EXPAND-RESTART-CASE)
(OPTIMIZERS CONDITION-CASE CATCH-ABORT PROCEED-CASE RESTART-CASE)
(IL:COMS (IL:FUNCTIONS DEFINE-CONDITION CHECK-TYPE ETYPECASE CTYPECASE ECASE CCASE ASSERT
HANDLER-BIND CONDITION-BIND CONDITION-CASE HANDLER-CASE IGNORE-ERRORS PROCEED-CASE
RESTART-CASE RESTART-BIND WITH-SIMPLE-RESTART DEFINE-PROCEED-FUNCTION CATCH-ABORT))
```

;; Conversion functions for translating old code

```
(IL:FUNCTIONS CONDITIONS::CONVERT-CONDITION-CASE CONDITIONS::CONVERT-OLD-DEFINE-CONDITION)
(IL:PROP (IL:FILETYPE IL:MAKEFILE-ENVIRONMENT)
IL:CL-ERROR)
(IL:DECLARE\ IL:DONTEVAL@LOAD IL:DOEVAL@COMPILE IL:DONTCOPY IL:COMPILEVARS (IL:ADDVARS (IL:NLAMA)
(IL:NLAML)
(IL:LAMA))))
```

;; Internal stuff.

(DEFUN **CONDITIONS::EXPAND-WITH-COLLECTION-SITES** (CONDITIONS::NEW-SITES CONDITIONS::BODY
CONDITIONS::OLD-SITES)

```
(LET ((CONDITIONS::NEW-SITES-AND-TAILS NIL))
  `(LET , (MAPCAN #' (LAMBDA (CONDITIONS::SITE)
    (UNLESS (GETF CONDITIONS::OLD-SITES CONDITIONS::SITE)
      `((, (CAR (PUSH (IL:GENSYM)
CONDITIONS::OLD-SITES))
(LAST , (CAR (PUSH CONDITIONS::SITE CONDITIONS::OLD-SITES))))))
CONDITIONS::NEW-SITES)
(MACROLET ((CONDITIONS::WITH-COLLECTION-SITES ((&REST CONDITIONS::SITES)
&BODY CONDITIONS::BODY)
(CONDITIONS::EXPAND-WITH-COLLECTION-SITES CONDITIONS::SITES CONDITIONS::BODY
', CONDITIONS::OLD-SITES))
(CONDITIONS::COLLECT-INTO (CONDITIONS::SITE CONDITIONS::FORM)
;; written in this way to take advantage of RPLCONS. The FORM is evaluated first so that COLLECT-INTO
;; nests properly, i.e., the test to determine if this is the first value collected should be done after the value
;; itself is generated in case it does collection as well.
(LET ((CONDITIONS::TAIL (GETF ', CONDITIONS::OLD-SITES CONDITIONS::SITE)))
(WHEN (NULL CONDITIONS::TAIL)
(ERROR "~S is not a valid site for ~S." CONDITIONS::SITE
'CONDITIONS::COLLECT-INTO))
` (LET ((SI::$WITH-COLLECTION-VALUE$ , CONDITIONS::FORM)
(IF , CONDITIONS::SITE
(RPLACD , CONDITIONS::TAIL (SETQ , CONDITIONS::TAIL (LIST
SI::$WITH-COLLECTION-VALUE$
)))
(SETQ , CONDITIONS::SITE (SETQ , CONDITIONS::TAIL (LIST
SI::$WITH-COLLECTION-VALUE$
))))
SI::$WITH-COLLECTION-VALUE$))))
,@CONDITIONS::BODY))))
```

(DEFMACRO **CONDITIONS::WITH-COLLECTION-SITES** ((&REST CONDITIONS::SITES)
&BODY CONDITIONS::BODY)
(**CONDITIONS::EXPAND-WITH-COLLECTION-SITES** CONDITIONS::SITES CONDITIONS::BODY NIL))

(DEFMACRO **DEFAULT-PROCEED-REPORT** (PROCEED-TYPE)
' (GET , PROCEED-TYPE ' IL:%DEFAULT-PROCEED-REPORT ' IL:DEFAULT-PROCEED-REPORTER))

(DEFMACRO **CONDITIONS::DEFAULT-RESTART-REPORT** (CONDITIONS::RESTART-TYPE)
' (GET , CONDITIONS::RESTART-TYPE ' IL:%DEFAULT-PROCEED-REPORT))

```

(DEFMACRO IL:WITH-GENSYMS (IL:VARS IL:PREFIX &BODY IL:BODY)
  `(LET , (IL:MAPCAR IL:VARS (IL:FUNCTION (LAMBDA (IL:VAR)
                                          ` (, IL:VAR (IL:GENSYM , IL:PREFIX))))
      , @IL:BODY))

(DEFMACRO IL:WITH-ERR-LOOP-VARS (IL:PREFIX &BODY IL:BODY)
  `(IL:WITH-GENSYMS (IL:VAL IL:BLOCK-NAME IL:AGAIN)
    , IL:PREFIX
    , @IL:BODY))

(DEFUN IL:STRIP-KEYWORDS (IL:ARGS)
  (VALUES (IL:FOR IL:OLD IL:ARGS IL:ON IL:ARGS IL:BY CDDR IL:WHILE (KEYWORDP (FIRST IL:ARGS))
          IL:COLLECT (LIST (FIRST IL:ARGS)
                          (SECOND IL:ARGS)))
          IL:ARGS))

(DEFUN IL:MAKE-REPORT-FUNCTION (IL:DATUM IL:BOUND-VAR &OPTIONAL IL:TYPE-NAME)
  (ETYPESCASE IL:DATUM
    (STRING IL:DATUM)
    (LIST `(LAMBDA (, IL:BOUND-VAR *STANDARD-OUTPUT*)
          , (IF IL:TYPE-NAME
              `(IL:WITH , IL:TYPE-NAME , IL:BOUND-VAR , IL:DATUM)
              IL:DATUM))))))

(DEFUN CONDITIONS::NORMALIZE-SLOT-DESCRIPTION (CONDITIONS::SLOT-DESC)
  (ETYPESCASE CONDITIONS::SLOT-DESC
    (CONS `(, (FIRST CONDITIONS::SLOT-DESC)
          , (SECOND CONDITIONS::SLOT-DESC)
          :READ-ONLY T))
    (SYMBOL `(, CONDITIONS::SLOT-DESC NIL :READ-ONLY T))))

(DEFUN IL:CHECK-*CASE-SELECTOR (IL:SELECTOR IL:NAME)
  (IF (OR (EQ IL:SELECTOR 'T)
          (EQ IL:SELECTOR 'OTHERWISE))
      (ERROR "~A not allowed in the ~A form." IL:SELECTOR IL:NAME)
      IL:SELECTOR))

(DEFUN IL:COLLECT-CASE-SELECTORS (IL:CLAUSES IL:NAME)
  (IL:MAPCONC IL:CLAUSES (IL:FUNCTION (LAMBDA (IL:CLAUSE)
                                        (IL:IF (AND (CONSP (CAR IL:CLAUSE))
                                                  (IL:FMEMB IL:NAME ' (ECASE CCASE)))
                                              IL:THEN (COPY-LIST (CAR IL:CLAUSE))
                                              IL:ELSE (LIST (IL:CHECK-*CASE-SELECTOR (CAR IL:CLAUSE)
                                                                 IL:NAME)))))))

(DEFUN IL:%SUFFIX-SYMBOL (IL:SYMBOL IL:SUFFIX PACKAGE)
  (INTERN (CONCATENATE 'STRING (SYMBOL-NAME IL:SYMBOL)
                      IL:SUFFIX)
          PACKAGE))

(DEFMACRO IL:PROCEED-ARG-COLLECTOR (IL:NAME)
  "Function that collects user-specified optional args (excluding the condition) for a named proceed case."
  `(GET , IL:NAME ' IL:%PROCEED-ARG-COLLECTOR))

(DEFUN SI::EXPAND-CONDITION-CASE (SI::FORM SI::CLAUSES SI::ENV SI::CTX SI::OPTIMIZE?)
  (MACROLET
    ((SI::BOUND-TYPES (SI::CLAUSE)
                      `(FIRST , SI::CLAUSE)))
    (IF (NULL SI::CLAUSES)
        SI::FORM
        ;; First, precompute the handler for this condition-case. We can use a constant catch tag because of the nice dynamic nesting properties of
        ;; CONDITION-CASE.
        (LET*
          ((SI::VALUE-SLOT (IF IL:*BYTECOMPILER-IS-EXPANDING*
                              (IL:GENSYM)
                              'SI::CONDITION-CASE-VALUES))
           (SI::NO-ERROR-CLAUSE (ASSOC ' :NO-ERROR SI::CLAUSES :TEST 'EQ))
           (SI::ONLY-ONE-VALUE? (AND (NULL SI::NO-ERROR-CLAUSE)
                                     SI::OPTIMIZE? SI::CTX (EQL (COMPILER:CONTEXT-VALUES-USED SI::CTX)
                                                                1))))
          (DECLARE (SPECIAL IL:*BYTECOMPILER-IS-EXPANDING*))
          (FLET
            ((SI::CONSTRUCT-NO-ERROR-CODE
              (SI::VALUE-FORM)
              (DESTRUCTURING-BIND (SI::SELECTOR SI::BOUND-VARS &REST SI::BODY)

```



```

      (SETF SI::FILTER SI::VALUE))
    (:FILTER
      (IF SI::FILTER (ERROR "Duplicate filter specified for proceed type ~S."
                            SI::NAME))
      (SETF SI::FILTER `(LAMBDA NIL ,SI::VALUE)))
    (:CONDITION
      (IF SI::FILTER (ERROR "Duplicate test form specified for proceed type ~S."
                            SI::NAME))
      (SETF SI::FILTER
        ;; consider using a closure here.
        `(LAMBDA NIL (TYPEP *CURRENT-CONDITION* ',SI::VALUE))))
    (:REPORT-FUNCTION
      (IF SI::REPORT (ERROR "Duplicate report form specified for proceed type ~S."
                            SI::NAME))
      (SETF SI::REPORT SI::VALUE))
    (:REPORT
      (IF SI::REPORT (ERROR "Duplicate report form specified for proceed type ~S."
                            SI::NAME))
      (SETF SI::REPORT (ETYPECASE SI::VALUE
                          (STRING SI::VALUE
                          (LIST `(LAMBDA (*STANDARD-OUTPUT*
                                          ,SI::VALUE))))))
      (OTHERWISE (CERROR "Ignore key/value pair" "Illegal keyword ~S in proceed case
                          ~S." SI::KEY SI::NAME))))
    (VALUES SI::FILTER SI::REPORT SI::TAIL)))

```

```

(DEFUN SI::SPLIT-PROCEED-CLAUSES (SI::CLAUSES SI::ENV SI::OPTIMIZE?)
  (LET
    (SI::CASES SI::BODIES)
    (IL:FOR SI::CLAUSE IL:IN SI::CLAUSES IL:AS SI::SELECTOR IL:FROM 0
      IL:DO (DESTRUCTURING-BIND
        (SI::NAME SI::VARS)
        SI::CLAUSE
        (MULTIPLE-VALUE-BIND (SI::FILTER SI::REPORT SI::TAIL)
          (SI::PROCESS-PROCEED-KEYWORDS SI::NAME (CDDR SI::CLAUSE)
            *PACKAGE*))
          (IF (NULL SI::NAME)
            (UNLESS SI::REPORT (ERROR "Unnamed proceed cases must have a report method: ~S" SI::CLAUSE)))
          )
        (MACROLET ((SI::CONSTANT-PROCEED-CASE? NIL
          '(AND (OR (NULL SI::FILTER)
            (AND (SYMBOLP SI::FILTER)
              (OR (NULL SI::ENV)
                (NOT (COMPILER:ENV-FBOUNDP SI::ENV SI::FILTER))))))
            (OR (NULL SI::REPORT)
              (STRINGP SI::REPORT)
              (AND (SYMBOLP SI::REPORT)
                (OR (NULL SI::ENV)
                  (NOT (COMPILER:ENV-FBOUNDP SI::ENV NIL)))))))
          (PUSH (IF (AND SI::OPTIMIZE? (SI::CONSTANT-PROCEED-CASE?))
            (IL:MAKE-PROCEED-CASE :NAME SI::NAME :SELECTOR SI::SELECTOR :TEST SI::FILTER
              :REPORT SI::REPORT)
            `(IL:MAKE-PROCEED-CASE :NAME ',SI::NAME :SELECTOR ,SI::SELECTOR :TEST
              , (AND SI::FILTER '#',SI::FILTER)
              :REPORT
              , (AND SI::REPORT (IF (STRINGP SI::REPORT)
                SI::REPORT
                '#',SI::REPORT))))
            SI::CASES))
          (PUSH (LIST* SI::SELECTOR SI::VARS SI::TAIL)
            SI::BODIES)))
    (VALUES (FLET ((SI::MAYBE-QUOTE (SI::X)
      (IF (IL:PROCEED-CASE-P SI::X)
        (IL:KWOTE SI::X)
        SI::X)))
      (COND
        ((EQL (IL:LENGTH SI::CASES)
          1)
          (SI::MAYBE-QUOTE (FIRST SI::CASES)))
          ((EVERY 'IL:PROCEED-CASE-P SI::CASES)
            (IL:KWOTE (NREVERSE SI::CASES)))
          (T `(LIST ,@(MAPCAR #'SI::MAYBE-QUOTE (NREVERSE SI::CASES))))))
      (REVERSE SI::BODIES))))

```

```

(DEFUN SI::EXPAND-PROCEED-CASE (SI::FORM SI::CLAUSES SI::ENV SI::CTX SI::OPTIMIZE?)
  (LET
    ((SI::VALUE-SLOT (IF IL:*BYTECOMPILER-IS-EXPANDING*
      (IL:GENSYM)
      'SI::PROCEED-CASE-NORMAL-VALUES))
    (SI::ONLY-ONE-VALUE? (AND SI::OPTIMIZE? SI::CTX (EQL (COMPILER:CONTEXT-VALUES-USED SI::CTX)
      1))))
    (DECLARE (SPECIAL IL:*BYTECOMPILER-IS-EXPANDING*))
    (MULTIPLE-VALUE-BIND (SI::CASES SI::BODIES)
      (SI::SPLIT-PROCEED-CLAUSES SI::CLAUSES SI::ENV SI::OPTIMIZE?))

```

```
(IF (NULL SI::CASES)
  SI::FORM
  `(LET* (,SI::VALUE-SLOT (SI::PROCEED-CASE-SELECTOR-AND-VALUES
    (LET ((IL:*PROCEED-CASES* (CONS ,SI::CASES IL:*PROCEED-CASES*)))
      (CATCH IL:*PROCEED-CASES*
        (SETF ,SI::VALUE-SLOT ,(IF SI::ONLY-ONE-VALUE?
          SI::FORM
          `(MULTIPLE-VALUE-LIST ,SI::FORM)))
        :NORMAL))))))
  (IF (EQ SI::PROCEED-CASE-SELECTOR-AND-VALUES :NORMAL)
    ,(IF SI::ONLY-ONE-VALUE?
      SI::VALUE-SLOT
      `(VALUES-LIST ,SI::VALUE-SLOT))
    ,(FLET ((SI::CREATE-A-CASE (SI::X)
      (DESTRUCTURING-BIND (CASE SI::ARGS
        &REST
        SI::BODY)
        SI::X
        (IF (NULL SI::ARGS)
          `(,CASE ,@SI::BODY)
          `(,CASE (DESTRUCTURING-BIND (&OPTIONAL ,@SI::ARGS)
            SI::PROCEED-CASE-VALUES
            ,@SI::BODY))))))
      (IF (EVERY #'(LAMBDA (SI::X)
        (NULL (SECOND SI::X)))
        SI::BODIES)
        `(CASE (CAR SI::PROCEED-CASE-SELECTOR-AND-VALUES)
          (IL:\\\\,@ (MAPCAR #'SI::CREATE-A-CASE SI::BODIES)))
        `( (LAMBDA (SI::PROCEED-CASE-SELECTOR SI::PROCEED-CASE-VALUES)
          (CASE SI::PROCEED-CASE-SELECTOR
            (IL:\\\\,@ (MAPCAR #'SI::CREATE-A-CASE SI::BODIES)))
            (CAR SI::PROCEED-CASE-SELECTOR-AND-VALUES)
            (CDR SI::PROCEED-CASE-SELECTOR-AND-VALUES))))))))))
```

```
(DEFUN CONDITIONS::PARSE-RESTART-CASE (CONDITIONS::NAME CONDITIONS::CLAUSE)
  (LET (CONDITIONS::FILTER CONDITIONS::REPORT CONDITIONS::INTERACTIVE)
    (IL:WHILE (KEYWORDP (FIRST CONDITIONS::CLAUSE))
      IL:DO (LET* ((CONDITIONS::KEY (POP CONDITIONS::CLAUSE))
        (CONDITIONS::VALUE (POP CONDITIONS::CLAUSE)))
        (CASE CONDITIONS::KEY
          (:FILTER (UNLESS CONDITIONS::FILTER (SETF CONDITIONS::FILTER CONDITIONS::VALUE)))
            (:CONDITION (UNLESS CONDITIONS::FILTER
              (SETF CONDITIONS::FILTER `(LAMBDA NIL (TYPEP *CURRENT-CONDITION*
                ',CONDITIONS::VALUE))))))
          (:REPORT (UNLESS CONDITIONS::REPORT (SETF CONDITIONS::REPORT CONDITIONS::VALUE)))
          (:INTERACTIVE (UNLESS CONDITIONS::INTERACTIVE (SETF CONDITIONS::INTERACTIVE
            CONDITIONS::VALUE)))
          (OTHERWISE (CERROR "Ignore key/value pair" "Illegal keyword ~S in restart named ~S."
            CONDITIONS::KEY CONDITIONS::NAME))))))
    (VALUES CONDITIONS::FILTER CONDITIONS::REPORT CONDITIONS::INTERACTIVE CONDITIONS::CLAUSE)))
```

```
(DEFUN CONDITIONS::CONVERT-RESTART-CASES (CONDITIONS::CLAUSES CONDITIONS::ENV CONDITIONS::OPTIMIZE?)
  (LET
    (CONDITIONS::CASES CONDITIONS::BODIES CONDITIONS::ANY-ARGLISTS? (CONDITIONS::ALL-CONSTANT? T))
    (CONDITIONS::WITH-COLLECTION-SITES
      (CONDITIONS::CASES CONDITIONS::BODIES)
      (IL:FOR CONDITIONS::CLAUSE IL:IN CONDITIONS::CLAUSES IL:AS CONDITIONS::SELECTOR IL:FROM 0
        IL:DO
          (LET* ((CONDITIONS::NAME (POP CONDITIONS::CLAUSE))
            (CONDITIONS::ARGLIST (POP CONDITIONS::CLAUSE)))
            (WHEN CONDITIONS::ARGLIST (SETF CONDITIONS::ANY-ARGLISTS? T))
            (MULTIPLE-VALUE-BIND (CONDITIONS::FILTER CONDITIONS::REPORT CONDITIONS::INTERACTIVE
              CONDITIONS::CODE)
              (CONDITIONS::PARSE-RESTART-CASE CONDITIONS::NAME CONDITIONS::CLAUSE)
              (MACROLET ((CONDITIONS::CONSTANT-RESTART? NIL
                '(AND (OR (NULL CONDITIONS::FILTER)
                  (AND (SYMBOLP CONDITIONS::FILTER)
                    (OR (NULL CONDITIONS::ENV)
                      (NOT (COMPILER:ENV-FBOUNDP CONDITIONS::ENV
                        CONDITIONS::FILTER))))))
                  (OR (NULL CONDITIONS::REPORT)
                    (STRINGP CONDITIONS::REPORT)
                    (AND (SYMBOLP CONDITIONS::REPORT)
                      (OR (NULL CONDITIONS::ENV)
                        (NOT (COMPILER:ENV-FBOUNDP CONDITIONS::ENV
                          CONDITIONS::REPORT))))))
                  (OR (NULL CONDITIONS::INTERACTIVE)
                    (AND (SYMBOLP CONDITIONS::INTERACTIVE)
                      (OR (NULL CONDITIONS::ENV)
                        (NOT (COMPILER:ENV-FBOUNDP CONDITIONS::ENV
                          CONDITIONS::INTERACTIVE))))))))))
              (CONDITIONS::COLLECT-INTO
                CONDITIONS::CASES
                (IF (AND CONDITIONS::OPTIMIZE? (CONDITIONS::CONSTANT-RESTART?))
                  (CONDITIONS::MAKE-RESTART :NAME CONDITIONS::NAME :SELECTOR CONDITIONS::SELECTOR
```

```

:TEST CONDITIONS::FILTER :REPORT CONDITIONS::REPORT :INTERACTIVE-FN
CONDITIONS::INTERACTIVE)
(PROGN (SETF CONDITIONS::ALL-CONSTANT? NIL)
  `(CONDITIONS::MAKE-RESTART :NAME ',CONDITIONS::NAME :SELECTOR
    ,CONDITIONS::SELECTOR :TEST ,(AND CONDITIONS::FILTER
      `#,CONDITIONS::FILTER)
    :REPORT
    ,(AND CONDITIONS::REPORT (IF (STRINGP CONDITIONS::REPORT)
      CONDITIONS::REPORT
      `#,CONDITIONS::REPORT))
    :INTERACTIVE-FN
    ,(AND CONDITIONS::INTERACTIVE `#,CONDITIONS::INTERACTIVE))))))
(CONDITIONS::COLLECT-INTO CONDITIONS::BODIES (IF (NULL CONDITIONS::ARGLIST)
  `,(CONDITIONS::SELECTOR ,@CONDITIONS::CODE)
  `,(CONDITIONS::SELECTOR (DESTRUCTURING-BIND
    (
      ,@CONDITIONS::ARGLIST
    )
    SI::PROCEED-CASE-VALUES
    ,@CONDITIONS::CODE))))
)))
(VALUE (COND
  ((NULL (REST CONDITIONS::CASES))
    (FIRST CONDITIONS::CASES))
  (CONDITIONS::ALL-CONSTANT? `',CONDITIONS::CASES)
  (T (CONS 'LIST CONDITIONS::CASES)))
  CONDITIONS::BODIES CONDITIONS::ANY-ARGLISTS?)))

(DEFUN CONDITIONS::EXPAND-RESTART-CASE (CONDITIONS::FORM CONDITIONS::CLAUSES CONDITIONS::ENV
  CONDITIONS::CTX CONDITIONS::OPTIMIZE?)
  (WHEN (NULL CONDITIONS::CLAUSES)
    (RETURN-FROM CONDITIONS::EXPAND-RESTART-CASE CONDITIONS::FORM))
  (LET ((CONDITIONS::VALUE-SLOT (IF IL:*BYTECOMPILER-IS-EXPANDING*
    (IL:GENSYM)
    'SI::PROCEED-CASE-NORMAL-VALUES))
    (CONDITIONS::ONLY-ONE-VALUE? (AND CONDITIONS::OPTIMIZE? CONDITIONS::CTX (EQL (
      COMPILER:CONTEXT-VALUES-USED
      CONDITIONS::CTX)
      1))))
    (DECLARE (SPECIAL IL:*BYTECOMPILER-IS-EXPANDING*))
    (MULTIPLE-VALUE-BIND (CONDITIONS::CASES CONDITIONS::BODIES CONDITIONS::ANY-ARGLISTS?)
      (CONDITIONS::CONVERT-RESTART-CASES CONDITIONS::CLAUSES CONDITIONS::ENV CONDITIONS::OPTIMIZE?)
      `(LET* (,CONDITIONS::VALUE-SLOT (SI::PROCEED-CASE-SELECTOR-AND-VALUES
        (LET ((IL:*PROCEED-CASES* (CONS ,CONDITIONS::CASES IL:*PROCEED-CASES*
          )))
          (CATCH IL:*PROCEED-CASES*
            (SETF ,CONDITIONS::VALUE-SLOT
              ,(IF CONDITIONS::ONLY-ONE-VALUE?
                CONDITIONS::FORM
                `(MULTIPLE-VALUE-LIST ,CONDITIONS::FORM))))
            :NORMAL))))
        (IF (EQ SI::PROCEED-CASE-SELECTOR-AND-VALUES :NORMAL)
          ,(IF CONDITIONS::ONLY-ONE-VALUE?
            CONDITIONS::VALUE-SLOT
            `(VALUES-LIST ,CONDITIONS::VALUE-SLOT))
          ,(IF CONDITIONS::ANY-ARGLISTS?
            `(LAMBDA (SI::PROCEED-CASE-SELECTOR SI::PROCEED-CASE-VALUES)
              (CASE SI::PROCEED-CASE-SELECTOR
                (IL:`,@ CONDITIONS::BODIES)))
              (CAR SI::PROCEED-CASE-SELECTOR-AND-VALUES)
              (CDR SI::PROCEED-CASE-SELECTOR-AND-VALUES))
            ;; Slightly simpler if no arglists to deal with...
            `(CASE (CAR SI::PROCEED-CASE-SELECTOR-AND-VALUES)
              (IL:`,@ CONDITIONS::BODIES))))))))))

(DEFOPTIMIZER CONDITION-CASE (FORM &REST CLAUSES &ENVIRONMENT ENV &CONTEXT CTX)
  (SI::EXPAND-CONDITION-CASE FORM CLAUSES ENV CTX T))

(DEFOPTIMIZER CATCH-ABORT (PRINT-FORM &BODY FORMS &ENVIRONMENT ENV &CONTEXT CTX)
  (IF (AND CTX (EQL (COMPILER:CONTEXT-VALUES-USED CTX)
    1))
    `(PROCEED-CASE (PROGN ,@FORMS)
      (ABORT NIL :REPORT ,PRINT-FORM NIL))
    'COMPILER:PASS))

(DEFOPTIMIZER PROCEED-CASE (FORM &REST CLAUSES &ENVIRONMENT ENV &CONTEXT CTX)
  (SI::EXPAND-PROCEED-CASE FORM CLAUSES ENV CTX T))

(DEFOPTIMIZER RESTART-CASE (CONDITIONS::FORM &REST CONDITIONS::CLAUSES &ENVIRONMENT CONDITIONS::ENV &CONTEXT
  CONDITIONS::CTX)

```

(CONDITIONS::EXPAND-RESTART-CASE CONDITIONS::FORM CONDITIONS::CLAUSES
CONDITIONS::ENV CONDITIONS::CTX T)

```
(DEFDEFINER DEFINE-CONDITION IL:STRUCTURES (CONDITIONS::NAME (CONDITIONS::PARENT-TYPE)
&OPTIONAL CONDITIONS::SLOTS &REST CONDITIONS::OPTIONS)
(LET ((CONDITIONS::PARENT-SLOTS (AND CONDITIONS::PARENT-TYPE (CL::STRUCTURE-SLOT-NAMES
CONDITIONS::PARENT-TYPE T)))
CONDITIONS::REPORTER CONDITIONS::HANDLER CONDITIONS::SLOT-DESCRIPTIONS
CONDITIONS::SHADOWED-SLOT-DESCRIPTIONS CONDITIONS::CLASS-OPTIONS CONDITIONS::DOC)
(SETQ CONDITIONS::SLOT-DESCRIPTIONS (WITH-COLLECTION (DOLIST (CONDITIONS::SLOT CONDITIONS::SLOTS)
(SETQ CONDITIONS::SLOT (
CONDITIONS::NORMALIZE-SLOT-DESCRIPTION
CONDITIONS::SLOT))
(IF (MEMBER (FIRST CONDITIONS::SLOT)
CONDITIONS::PARENT-SLOTS :TEST
'EQ)
(PUSH CONDITIONS::SLOT
CONDITIONS::SHADOWED-SLOT-DESCRIPTIONS
)
(COLLECT CONDITIONS::SLOT))))))
(SETQ CONDITIONS::CLASS-OPTIONS (WITH-COLLECTION (DOLIST (CONDITIONS::OPTION CONDITIONS::OPTIONS)
(MACROLET ((CONDITIONS::MULTIPLE-OPTION-ERROR
NIL
'(CERROR "Ignore the later ~*~S
option" "~S is a duplicate ~S
option for ~S."
CONDITIONS::OPTION (FIRST
CONDITIONS::OPTION
)
)
'DEFINE-CONDITION)))
(ECASE (FIRST CONDITIONS::OPTION)
((:CONC-NAME :INLINE) (COLLECT
CONDITIONS::OPTION
))
(:DOCUMENTATION
(AND CONDITIONS::DOC
(SETQ CONDITIONS::DOC
(SECOND CONDITIONS::OPTION
))))
(:REPORT (IF (NULL CONDITIONS::REPORTER)
(SETQ CONDITIONS::REPORTER
(SECOND
CONDITIONS::OPTION
))
)
(CONDITIONS::MULTIPLE-OPTION-ERROR
)))
(:HANDLE (IF (NULL CONDITIONS::HANDLER)
(SETQ CONDITIONS::HANDLER
(SECOND
CONDITIONS::OPTION
))
)
(CONDITIONS::MULTIPLE-OPTION-ERROR
))))))
'(PROGN (DEFSTRUCT (,CONDITIONS::NAME ,@(AND CONDITIONS::PARENT-TYPE
; hook for CONDITION
'((:INCLUDE ,CONDITIONS::PARENT-TYPE ,. (NREVERSE
CONDITIONS::SHADOWED-SLOT-DESCRIPTIONS
))))
, .CONDITIONS::CLASS-OPTIONS
(:PRINT-FUNCTION IL:%PRINT-CONDITION)
(:CONSTRUCTOR ,(IL:%SUFFIX-SYMBOL CONDITIONS::NAME " constructor" (
SYMBOL-PACKAGE
CONDITIONS::NAME
)))
(:COPIER NIL)
(:PREDICATE NIL))
, .CONDITIONS::SLOT-DESCRIPTIONS)
(EVAL-WHEN (LOAD EVAL)
,@(AND CONDITIONS::DOC `((SETF (DOCUMENTATION ',CONDITIONS::NAME 'TYPE)
',CONDITIONS::DOC)))
,@(IF (CONSP CONDITIONS::REPORTER)
(LET ((CONDITIONS::REPORTER-NAME (IL:%SUFFIX-SYMBOL CONDITIONS::NAME " report
method" (SYMBOL-PACKAGE CONDITIONS::NAME)))
)
(PROG1 `((SETF (SYMBOL-FUNCTION ',CONDITIONS::REPORTER-NAME)
#',CONDITIONS::REPORTER))
(SETQ CONDITIONS::REPORTER CONDITIONS::REPORTER-NAME)))
(SETF (CONDITION-REPORTER ',CONDITIONS::NAME)
, (TYPECASE CONDITIONS::REPORTER
(NULL NIL)
(STRING CONDITIONS::REPORTER)
(T `#',CONDITIONS::REPORTER)))
,@(IF (CONSP CONDITIONS::HANDLER)
(LET ((CONDITIONS::HANDLER-NAME (IL:%SUFFIX-SYMBOL CONDITIONS::NAME " default
```



```

(DEFMACRO HANDLER-BIND (BINDINGS &REST FORMS)
  "Eval forms under temporary new condition handlers."
  (IF (NULL BINDINGS)
    `(PROGN ,@FORMS)
    `(LET
      ((IL:*CONDITION-HANDLER-BINDINGS*
        (CONS ,(IF (NULL (REST BINDINGS))
          `(CONS ',(FIRST (FIRST BINDINGS))
            ,(SECOND (FIRST BINDINGS)))
          `(LIST :MULTIPLE-HANDLER-BINDINGS
            ,.(WITH-COLLECTION (DOLIST (BINDING BINDINGS)
              (COLLECT ',(FIRST BINDING))
              (COLLECT (SECOND BINDING))))))
        IL:*CONDITION-HANDLER-BINDINGS*))
      ,@FORMS)))

(DEFMACRO CONDITION-BIND (BINDINGS &REST FORMS)
  "Eval forms under temporary new condition handlers; synonym for HANDLER-BIND"
  `(HANDLER-BIND ,BINDINGS ,@FORMS))

(DEFMACRO CONDITION-CASE (FORM &REST CLAUSES)
  "Eval form under condition handlers that provide alternate continuations."
  (SI::EXPAND-CONDITION-CASE FORM CLAUSES NIL NIL NIL))

(DEFMACRO HANDLER-CASE (CONDITIONS::FORM &REST CONDITIONS::CLAUSES)
  "Eval form under condition handlers that provide alternate continuations."
  (SI::EXPAND-CONDITION-CASE CONDITIONS::FORM CONDITIONS::CLAUSES NIL NIL NIL)
  `(CONDITION-CASE ,CONDITIONS::FORM ,@CONDITIONS::CLAUSES))

(DEFMACRO IGNORE-ERRORS (&BODY IL:FORMS)
  "Eval forms with handler for any condition of type ERROR."
  `(CONDITION-CASE (PROGN ,@IL:FORMS)
    (ERROR (CONDITION)
      (VALUES NIL CONDITION))))

(DEFMACRO PROCEED-CASE (FORM &REST CLAUSES &ENVIRONMENT ENV)
  "Eval forms, establishing a place to proceed from errors."
  (SI::EXPAND-PROCEED-CASE FORM CLAUSES ENV NIL NIL))

(DEFMACRO RESTART-CASE (CONDITIONS::FORM &REST CONDITIONS::CLAUSES &ENVIRONMENT CONDITIONS::ENV)
  (CONDITIONS::EXPAND-RESTART-CASE CONDITIONS::FORM CONDITIONS::CLAUSES CONDITIONS::ENV NIL NIL))

(DEFMACRO RESTART-BIND (CONDITIONS::BINDINGS &BODY CONDITIONS::BODY)
  ;; This should also be optimized along the lines of RESTART-BIND. Not as important since this one will be rare.
  (IF (NULL CONDITIONS::BINDINGS)
    `(PROGN ,@CONDITIONS::BODY)
    (LET ((CONDITIONS::CASES (MAPCAR #'(LAMBDA (CONDITIONS::BINDING)
      (DESTRUCTURING-BIND (CONDITIONS::NAME &KEY
        CONDITIONS::INTERACTIVE-FUNCTION
        CONDITIONS::REPORT-FUNCTION
        CONDITIONS::FILTER-FUNCTION)
        CONDITIONS::BINDING
        `(CONDITIONS::MAKE-RESTART :NAME ',CONDITIONS::NAME
          :SELECTOR 'SI::COMPLEX-RESTART-MARKER :FUNCTION
          ,FUNCTION :INTERACTIVE-FN
          ,CONDITIONS::INTERACTIVE-FUNCTION :REPORT
          ,CONDITIONS::REPORT-FUNCTION :TEST
          ,CONDITIONS::FILTER-FUNCTION)))
      CONDITIONS::BINDINGS)))
    `(LET ((IL:*PROCEED-CASES* (CONS ,(IF (NULL (REST CONDITIONS::CASES))
      (FIRST CONDITIONS::CASES)
      `(LIST ,@CONDITIONS::CASES))
      IL:*PROCEED-CASES*))
      ,@CONDITIONS::BODY))))

(DEFMACRO WITH-SIMPLE-RESTART ((RESTART-NAME CONDITIONS::FORMAT-STRING &REST CONDITIONS::FORMAT-ARGS)
  &BODY CONDITIONS::BODY)
  `(RESTART-CASE (PROGN ,@CONDITIONS::BODY)
    (,RESTART-NAME NIL :REPORT (LAMBDA (STREAM)
      (FORMAT STREAM ,CONDITIONS::FORMAT-STRING
        ,@CONDITIONS::FORMAT-ARGS))
      (VALUES NIL T))))

(DEFDEFINER DEFINE-PROCEED-FUNCTION IL:FUNCTIONS (NAME &REST TAIL)
  (MULTIPLE-VALUE-BIND (FILTER REPORT ARGLIST)
    (SI::PROCESS-PROCEED-KEYWORDS NAME TAIL (SYMBOL-PACKAGE NAME))
    (LET ((VARS (IL:MAPCAR ARGLIST (IL:FUNCTION (IL:LAMBDA (X)
      (IF (SYMBOLP X)

```

```

                                X
                                (CAR X))))))
(UNLESS REPORT
  (SETF REPORT 'IL:DEFAULT-PROCEED-REPORTER))
\ (PROGN ,@(IF (CONSP FILTER)
  (LET ((FILTER-FUNCTION (IL:%SUFFIX-SYMBOL NAME " proceed case default test" (
                                SYMBOL-PACKAGE
                                NAME))))
    (PROG1 `((SETF (SYMBOL-FUNCTION ',FILTER-FUNCTION)
                  #' ,FILTER))
            (SETF FILTER FILTER-FUNCTION))))
  (SETF (DEFAULT-PROCEED-TEST ',NAME)
    , (AND FILTER #' ,FILTER))
  ,@(IF (CONSP REPORT)
    (LET ((REPORTER (IL:%SUFFIX-SYMBOL NAME " proceed case default report method"
                                (SYMBOL-PACKAGE NAME))))
      (PROG1 `((SETF (SYMBOL-FUNCTION ',REPORTER)
                    #' ,REPORT))
              (SETF REPORT REPORTER))))
    (SETF (DEFAULT-PROCEED-REPORT ',NAME)
      , (IF (STRINGP REPORT)
        REPORT
        #' ,REPORT))
    (DEFUN ,NAME (&OPTIONAL ,@ARGLIST)
      (LET ((RESTART (FIND-RESTART ',NAME)))
        (WHEN RESTART
          (INVOKE-RESTART RESTART ,@VARS))))))

```

```

(DEFMACRO CATCH-ABORT (PRINT-FORM &BODY FORMS)
  \ (PROCEED-CASE (PROGN ,@FORMS)
    (ABORT (CONDITION)
      :REPORT
      ,PRINT-FORM
      (VALUES NIL (CONDITION))))

```

:: Conversion functions for translating old code

```

(DEFUN CONDITIONS::CONVERT-CONDITION-CASE (CONDITIONS::WHOLE)
  (DESTRUCTURING-BIND (CONDITIONS::FN CONDITIONS::FORM &REST CONDITIONS::CLAUSES)
    CONDITIONS::WHOLE
    (DECLARE (IGNORE CONDITIONS::FN))
    \ (HANDLER-CASE ,CONDITIONS::FORM
      ,@(MAPCAR #'(LAMBDA (CONDITIONS::CLAUSE)
        (IF (LISTP (FIRST CONDITIONS::CLAUSE))
          `((OR ,@(FIRST CONDITIONS::CLAUSE))
            ,@(REST CONDITIONS::CLAUSE))
            CONDITIONS::CLAUSE)
          CONDITIONS::CLAUSES))))

```

```

(DEFUN CONDITIONS::CONVERT-OLD-DEFINE-CONDITION (CONDITIONS::FORM)
  (DESTRUCTURING-BIND
    (CONDITIONS::FN CONDITIONS::NAME CONDITIONS::PARENT-TYPE &REST CONDITIONS::ARGS)
    (REMOVE-COMMENTS CONDITIONS::FORM)
    (UNLESS (EQ CONDITIONS::FN 'DEFINE-CONDITION)
      (PRINT *ERROR-OUTPUT* "Not a define-condition form")
      (RETURN-FROM CONDITIONS::CONVERT-OLD-DEFINE-CONDITION CONDITIONS::FORM))
    (FLET
      ((CONDITIONS::STRIP-KEYWORDS (CONDITIONS::ARGS)
        (VALUES (IL:FOR IL:OLD CONDITIONS::ARGS IL:ON CONDITIONS::ARGS IL:BY CDDR
                  IL:WHILE (KEYWORDP (FIRST CONDITIONS::ARGS)) IL:COLLECT (LIST (FIRST CONDITIONS::ARGS)
                  (SECOND CONDITIONS::ARGS)))
                CONDITIONS::ARGS)))
      (MULTIPLE-VALUE-BIND (CONDITIONS::KEYS CONDITIONS::SLOTS)
        (CONDITIONS::STRIP-KEYWORDS CONDITIONS::ARGS)
        (LET
          ((CONDITIONS::OPTIONS
            (WITH-COLLECTION
              (DOLIST (CONDITIONS::PAIR CONDITIONS::KEYS)
                (DESTRUCTURING-BIND
                  (CONDITIONS::KEY CONDITIONS::VALUE)
                  CONDITIONS::PAIR
                  (CCASE
                    CONDITIONS::KEY
                    ((:INLINE :CONC-NAME)
                     (COLLECT CONDITIONS::PAIR))
                    (:REPORT-FUNCTION (COLLECT `(:REPORT ,CONDITIONS::VALUE)))
                    (:REPORT
                     (COLLECT
                       (ETYPESCASE CONDITIONS::VALUE
                         (STRING `(:REPORT ,CONDITIONS::VALUE))
                         (LIST
                           `(:REPORT
                             , (LET
                               ((CONDITION (INTERN "CONDITION" *PACKAGE*)))

```

```

(CONDITIONS::ALL-SLOTS (APPEND (CL::STRUCTURE-SLOT-NAMES CONDITIONS::PARENT-TYPE
                                T)
                                (MAPCAR #'(LAMBDA (CONDITIONS::X)
                                                (IF (CONSP CONDITIONS::X)
                                                    (CAR CONDITIONS::X)
                                                    CONDITIONS::X))
                                CONDITIONS::SLOTS))))
` (LAMBDA
  (,CONDITION *STANDARD-OUTPUT*)
  , (WALK-FORM CONDITIONS::VALUE :WALK-FUNCTION
      #' (LAMBDA (CONDITIONS::FORM CONDITIONS::CONTEXT)
          (IF (AND (SYMBOLP CONDITIONS::FORM)
                  (MEMBER CONDITIONS::FORM CONDITIONS::ALL-SLOTS))
              (VALUES (LIST (IL:%SUFFIX-SYMBOL CONDITIONS::NAME
                           (CONCATENATE 'STRING "-" (SYMBOL-NAME
                                         CONDITIONS::FORM)
                                         ))
                          *PACKAGE*)
                      CONDITION)
                    T)
              (CONDITIONS::FORM))
          :COPY T :LEXICAL-VARIABLES (LIST CONDITION)))))))))
(:HANDLER-FUNCTION (COLLECT `(:HANDLE ,CONDITIONS::VALUE)))
(:HANDLE
 (COLLECT
  `(:HANDLE
   , (LET
      ((CONDITION (INTERN "CONDITION" *PACKAGE*))
       (CONDITIONS::ALL-SLOTS (APPEND (CL::STRUCTURE-SLOT-NAMES CONDITIONS::PARENT-TYPE T)
                                       (MAPCAR #'(LAMBDA (CONDITIONS::X)
                                                       (IF (CONSP CONDITIONS::X)
                                                           (CAR CONDITIONS::X)
                                                           CONDITIONS::X))
                                       CONDITIONS::SLOTS))))
      ` (LAMBDA (,CONDITION)
        , (WALK-FORM CONDITIONS::VALUE :WALK-FUNCTION
            #' (LAMBDA (CONDITIONS::FORM CONDITIONS::CONTEXT)
                (IF (AND (SYMBOLP CONDITIONS::FORM)
                        (MEMBER CONDITIONS::FORM CONDITIONS::ALL-SLOTS))
                    (VALUES (LIST (IL:%SUFFIX-SYMBOL CONDITIONS::NAME
                                   (CONCATENATE 'STRING "-" (SYMBOL-NAME
                                                 CONDITIONS::FORM)
                                                 ))
                                  *PACKAGE*)
                            CONDITION)
                          T)
                    (CONDITIONS::FORM))
                :COPY T :LEXICAL-VARIABLES (LIST CONDITION)))))))))
(DEFINE-CONDITION ,CONDITIONS::NAME (,CONDITIONS::PARENT-TYPE)
  (,@CONDITIONS::SLOTS)
  ,@CONDITIONS::OPTIONS))))))
(IL:PUTPROPS IL:CL-ERROR IL:FILETYPE :COMPILE-FILE)
(IL:PUTPROPS IL:CL-ERROR IL:MAKEFILE-ENVIRONMENT (:READTABLE "XCL" :PACKAGE "XCL"))
(IL:DECLARE\ : IL:DONTEVAL@LOAD IL:DOEVAL@COMPILE IL:DONTCOPY IL:COMPILEVAR)
(IL:ADDTOVAR IL:NLAMA )
(IL:ADDTOVAR IL:NLAML )
(IL:ADDTOVAR IL:LAMA )
)
(IL:PUTPROPS IL:CL-ERROR IL:COPYRIGHT ("Venue & Xerox Corporation" 1986 1987 1988 1990 1991))

```

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