

CONTEXT CDIS_CONTEXT

SETS

Attr_id /* Abstract Attribute type for airport information which will be refined in the later stages to specific attribute types such as Wind Attribute. */

Attr_value /* Abstract type definition for Airport attributes value. */

EDD_id /* This an abstract type definition for display equipments at a user positions. Each display will be assigned with identical EDD_id. */

EDD_type /* An EDD_type is a device type associated with a user position. */

EDD_display /* EDD_display describes the available display devices. It contains state representing the current contents of the display. */

Page_number /* Public pages are numbered. Different sets of numbers are used for full and half pages. */

Page_contents /* Page_contents defines types and functions relating to the layout and presentation of airport data. */

Page /* An abstract type definition, describes the public and private pages in the system. */

Attrs /* An abstract record type which relating parameters values to Attr_id. */

Disp_params /* A record type representing display specific parameters which they will be used for rendering the actual data. */

CONSTANTS

EDIT
EDDs
EDITORS
contents
value
Database
dp_data
dp_page
disp_values

AXIOMS

$axm1 : EDIT \in EDD_type$ /* EDIT type indicating that a specific user positions has the capability of editing data. */

$axm2 : EDDs \in EDD_id \rightarrow EDD_type$

$axm3 : EDITORS \subseteq EDD_id$ /* A subset of terminal devices which are allowed to do the editing task. */

$axm4 : EDITORS = EDDs^{-1}[\{EDIT\}]$

$axm5 : contents \in Page \rightarrow Page_contents$ /* Constant mapping which maps the page numbers to a related content a technique which allow to abstractly define record's type and refine its structure in a stepwise manner. */

$axm6 : value \in Attrs \rightarrow Attr_value$ /* Constant mapping of Attributes to their related value field a technique which allow to abstractly define record's type and refine its structure in a stepwise manner. */

$axm8 : Attr_id \neq \emptyset$

$axm7 : Attrs \neq \emptyset$

$axm11 : Database = Attr_id \rightarrow Attrs$ /* Generic definition for the system's database. */

$axm9 : dp_data \in Disp_params \rightarrow Database$ /* A mapping from the physical parameters of display devices to the transient data in the database. */

$axm10 : dp_page \in Disp_params \rightarrow Page$ /* A mapping which relate a display device to the

page number that should be shown on this display. */
 $axm12 : disp_values \in Disp_params \rightarrow EDD_display$ /* A mapping to extract the actual
display device index. */

THEOREMS

$thm1 : Attr_id \rightarrow Attrs \neq \emptyset$

END