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An Event-B Specification of CDIS_CONTEXT7 @ Date: 1 Oct 2007 @ Time: 05:19:57 PM
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CONTEXT CDIS_CONTEXT7

REFINES CDIS_CONTEXT6

SETS

AirportRunway
ICAO_country_id
ICAO_airport_id
Runway_name
Runway_id

CONSTANTS

Airports_info
Runways_info
ADIS_name
Country_id
Airpot_id
AirportName
RunwayName
RunwayId
Airport_record_ids
All_airport_attr_ids
Runway_attr_id
Airport_attr_ids
Airport_attr_unique_id
record
attr_id
All_airport_attr_value
Runway_attr_value
UNAVAILABLE
Airport_attr_value
Met_attr_id
Wind_attr_id
ATIS_LETTER
Text
ATIS_letter
Cloud_cover
Date_Time
Mbar
Metar
Met_serial_no
Sky_obscured
Temp_and_dewpoint
Visibility
Wind_speed
Wind_dir_and_speed
Min_and_max_wind_speed
Min_and_max_wind_dir
CAVOK
CALM

AXIOMS

$axm12 : Airports_info \subseteq AirportRunway$
 $axm13 : Runways_info \subseteq AirportRunway$
 $axm14 : Airports_info \cap Runways_info = \emptyset$
 $axm1 : Airport_record_ids = Airports_info \cup Runways_info$
 $axm5 : ADIS_name = Airports_info$
 $axm7 : Country_id \in Airports_info \rightarrow ICAO_country_id$
 $axm8 : Airpot_id \in Airports_info \rightarrow ICAO_airport_id$
 $axm9 : AirportName \in Runways_info \rightarrow Airports_info$
 $axm10 : RunwayName \in Runways_info \rightarrow Runway_name$
 $axm11 : RunwayId \in Runways_info \rightarrow \mathbb{P}(Runway_id)$
 $axm2 : \forall r \cdot r \in Runways_info \Rightarrow card(RunwayId(r)) \leq 2$
 $axm16 : \top$
 $axm3 : All_airport_attr_ids \subseteq Attr_id$
 $axm4 : Runway_attr_id \subseteq Attr_id$
 $axm6 : Airport_attr_ids = All_airport_attr_ids \cup Runway_attr_id$
 $axm15 : All_airport_attr_ids \cap Runway_attr_id = \emptyset$
 $axm17 : \top$
 $axm18 : Airport_attr_unique_id \subseteq Attr_id$
 $axm19 : record \in Airport_attr_unique_id \rightarrow Airport_record_ids$
 $axm20 : attr_id \in Airport_attr_unique_id \rightarrow Airport_attr_ids$
 $axm21 : \forall a \cdot a \in Airport_attr_unique_id \wedge record(a) \in Airports_info \Rightarrow attr_id(a) \in All_airport_attr_ids$
 $axm22 : \forall a \cdot a \in Airport_attr_unique_id \wedge record(a) \in Runways_info \Rightarrow attr_id(a) \in Runway_attr_id$
 $axm23 : \top$
 $axm24 : All_airport_attr_value \subseteq Attr_id$
 $axm25 : Runway_attr_value \subseteq Attr_id$
 $axm26 : UNAVAILABLE \in Attr_id$
 $axm27 : Airport_attr_value = All_airport_attr_value \cup Runway_attr_value \cup \{UNAVAILABLE\}$
 $axm28 : All_airport_attr_value \cap Runway_attr_value = \emptyset$
 $axm29 : All_airport_attr_value \cap \{UNAVAILABLE\} = \emptyset$
 $axm30 : Runway_attr_value \cap \{UNAVAILABLE\} = \emptyset$
 $axm32 : \top$
 $axm31 : Met_attr_id \subseteq Attr_id$
 $axm33 : Wind_attr_id \subseteq Attr_id$
 $axm34 : ATIS_LETTER \in Attr_id$
 $axm35 : All_airport_attr_ids = Met_attr_id \cup Wind_attr_id \cup \{ATIS_LETTER\}$
 $axm36 : Met_attr_id \cap Wind_attr_id = \emptyset$
 $axm37 : Met_attr_id \cap \{ATIS_LETTER\} = \emptyset$
 $axm38 : Wind_attr_id \cap \{ATIS_LETTER\} = \emptyset$
 $axm39 : \top$
 $axm40 : Text \subseteq Attr_value$
 $axm41 : ATIS_letter \subseteq Attr_value$
 $axm42 : Cloud_cover \subseteq Attr_value$
 $axm43 : Date_Time \subseteq Attr_value$
 $axm44 : Mbar \subseteq Attr_value$
 $axm45 : Metar \subseteq Attr_value$
 $axm46 : Met_serial_no \subseteq Attr_value$
 $axm47 : Sky_obsured \subseteq Attr_value$
 $axm48 : Temp_and_dewpoint \subseteq Attr_value$
 $axm49 : Visibility \subseteq Attr_value$
 $axm50 : Wind_speed \subseteq Attr_value$
 $axm51 : Wind_dir_and_speed \subseteq Attr_value$
 $axm52 : Min_and_max_wind_speed \subseteq Attr_value$
 $axm53 : Min_and_max_wind_dir \subseteq Attr_value$
 $axm54 : CAVOK \subseteq Attr_value$
 $axm55 : CALM \subseteq Attr_value$

axm56 : \top

END