ATIS

Schema Reference

Automatic Terminal Information Service
Data Model & Generation System

37	4	500
DACH Airports	Difficulty Tiers	ATIS Entries

Aevoli Pilot Training Platform

Version 1.0 · January 2026

Contents

What is ATIS? ... 3
Real-World ATIS Structure ... 3
Components of an ATIS ... 3
Data Model ... 4
Schema Overview ... 4
Collections ... 4
ATIS Entry Fields ... 5
Difficulty System ... 6
Tier Overview ... 6
Parameter Comparison ... 7
Weather Codes ... 8
Weather Phenomena ... 8
Cloud Types ... 8
Generation Pipeline ... 10
Flow Diagram ... 10
Step Details ... 10
Example Outputs ... 11
API Patterns ... 12
Fetching ATIS Entries ... 12
Filter by Difficulty ... 12
Filter by Airport ... 12
Random Selection for Practice ... 12
Get Difficult Weather Conditions ... 12

What is ATIS?

ATIS (Automatic Terminal Information Service) is a continuous broadcast of recorded aeronautical information at busy airports. Pilots listen to ATIS before contacting ATC to get essential information about weather, active runways, and operational notices.

Real-World ATIS Structure

> 📻 **Key Concept**
>
> Every ATIS broadcast follows a standardized format. Understanding this structure is essential for quick and accurate comprehension during high-workload phases of flight.

Frankfurt Information Alpha

Recorded at **1350 Zulu**
Runway in use **25L** for landing, **25C** for takeoff
ILS approach
Transition level **70**

Wind **240 degrees 12 knots**
Visibility **10 kilometers or more**
Few clouds **3000 feet**, scattered **8000 feet**
Temperature **18**, dewpoint **12**
QNH **1018**

Acknowledge receipt of information Alpha

Components of an ATIS

Identification

- Airport name
- Information letter (Alpha–Zulu)
- Recording time (Zulu)

Runway Information

- Active runway(s)
- Approach type (ILS, RNAV, etc.)
- Transition level

Weather

- Wind (direction, speed, gusts)
- Visibility (meters/km)
- Weather phenomena (rain, fog, etc.)
- Clouds (type, height, CB)
- Temperature & dewpoint
- QNH (altimeter setting)

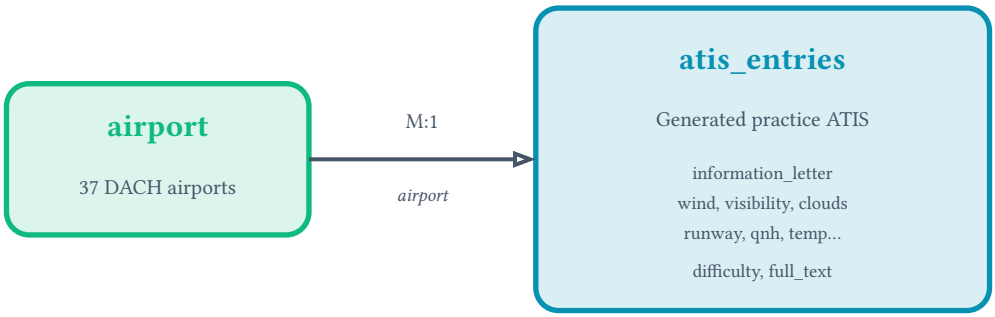
Remarks

- Operational notices
- Hazards
- NOTAMs

Data Model

The ATIS system uses two main collections in Directus, with a clean relational structure.

Schema Overview



Collections

✈️ airport

Shared reference collection for all tools

`icao`	4-letter ICAO code (EDDF, LOWW...)
`name`	Full airport name
`city`	City name
`country`	DE, AT, or CH
`elevation_ft`	Field elevation in feet
`transition_altitude`	TA in feet (usually 5000)
`runways`	JSON array of runway configs

📻 atis_entries

Generated ATIS broadcasts for practice

Core fields:

- `airport` → linked airport
- `information_letter` (Alpha–Zulu)
- `observation_time`
- `difficulty`
- `full_text` (spoken ATIS)

See next page for full field list

ATIS Entry Fields

The `atis_entries` collection contains all components of an ATIS broadcast:

Identification

Field	Description
`information_letter`	Alpha, Bravo, Charlie…
`observation_time`	Recording time (Zulu)
`difficulty`	super_easy → hard

Runway

Field	Description
`runway_in_use`	Active runway designator
`approach_type`	ILS, RNAV, Visual…
`transition_level`	FL for transition

Temperature & Pressure

Field	Description
`temperature`	°C
`dewpoint`	°C
`qnh`	hPa

Wind

Field	Description
`wind_direction`	Degrees (0–360)
`wind_speed`	Knots
`wind_gust`	Gust speed (if any)
`wind_variable_from`	Variable range start
`wind_variable_to`	Variable range end
`is_calm`	Calm wind flag

Visibility & Clouds

Field	Description
`visibility`	Meters (9999 = 10km+)
`rvr`	JSON: runway visual range
`weather`	JSON: phenomena codes
`clouds`	JSON: cloud layers
`is_cavok`	CAVOK flag

Output

Field	Description
`full_text`	Complete spoken ATIS
`remarks`	JSON: operational notes

Difficulty System

The 4-tier difficulty system provides a progressive learning path from beginner to professional readiness.

Tier Overview

① SUPER EASY

"Perfect weather, simple format — for learning ATIS structure"

Visibility	Wind
10 – km+	0 – 8 kt

- CAVOK 70% probability
- No gusts, no weather
- Single runway only
- Round numbers (QNH: 1013, 1020)
- No remarks

② EASY

"Good weather with minor variations — building confidence"

Visibility	Wind
5 – 10 km	3 – 15 kt

- CAVOK 30% probability
- Rare gusts (5%)
- Light weather only: `-RA` `-DZ` `BR`
- Max 1 remark
- Still uses round numbers

③ MEDIUM

"Realistic operational conditions — developing proficiency"

Visibility	Wind
1.5 – 10 km	5 – 28 kt

- Gusts 25% probability
- Variable winds possible
- RVR when visibility low
- Multiple cloud layers
- Weather: `RA` `SN` `SHRA` `HZ`
- Max 2 remarks

④ HARD

"Challenging weather — professional readiness"

Visibility	Wind
100m – 5 km	8 – 45 kt

- Gusts 50% probability
- RVR 60% probability
- Cumulonimbus clouds
- Wind shear possible
- All weather types
- Up to 4 cloud layers
- Max 3 complex remarks

Parameter Comparison

Parameter	SUPER EASY	EASY	MEDIUM	HARD
Min visibility	10 km	5 km	1.5 km	100 m
Max wind	8 kt	15 kt	28 kt	45 kt
Gust probability	0%	5%	25%	50%
CAVOK probability	70%	30%	15%	0%
Weather probability	0%	15%	40%	75%
Max cloud layers	1	2	3	4
Min ceiling	5000 ft	3000 ft	800 ft	100 ft
RVR probability	0%	0%	20%	60%
Variable wind prob	0%	10%	25%	35%
Max remarks	0	1	2	3
Round numbers	Yes	Yes	No	No
CB probability	0%	0%	0%	15%

Weather Codes

ATIS uses standardized ICAO weather codes. The generator produces realistic combinations based on difficulty.

Weather Phenomena

Intensity Prefixes

Code	Meaning	Example
`-`	Light	`-RA`
(none)	Moderate	`RA`
`+`	Heavy	`+RA`

Precipitation

Code	Meaning
`RA`	Rain
`SN`	Snow
`DZ`	Drizzle
`SG`	Snow grains
`GR`	Hail
`GS`	Small hail
`PL`	Ice pellets

Obscuration

Code	Meaning
`BR`	Mist (vis 1–5 km)
`FG`	Fog (vis < 1 km)
`HZ`	Haze
`FU`	Smoke

Descriptors

Code	Meaning	Example
`SH`	Showers	`SHRA`
`TS`	Thunderstorm	`TSRA`
`FZ`	Freezing	`FZRA`
`BL`	Blowing	`BLSN`

Cloud Types

FEW
1–2 oktas
Few clouds

SCT
3–4 oktas
Scattered

BKN
5–7 oktas
Broken

OVC
8 oktas
Overcast

CAVOK Conditions

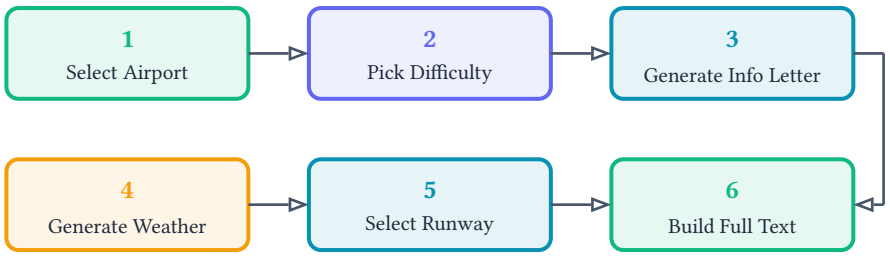
CAVOK (Ceiling And Visibility OK) is used when:

- Visibility 10 km or more
- No cloud below 5000 ft or MSA (whichever higher)
- No CB or TCU
- No significant weather

Generation Pipeline

The generator creates realistic, diverse ATIS entries following a structured process.

Flow Diagram



Step Details

1. Select Airport

Random selection from 37 DACH airports. The airport provides:

- ICAO code and name
- Available runways
- Transition altitude
- Default frequency

2. Pick Difficulty

Based on target distribution:

- super_easy: 25%
- easy: 30%
- medium: 30%
- hard: 15%

3. Generate Info Letter

Sequential or random from NATO alphabet (Alpha–Zulu). Each letter identifies the ATIS version.

4. Generate Weather

Based on difficulty settings:

- Wind (direction, speed, gusts)
- Visibility
- Weather phenomena
- Cloud layers
- RVR (if low visibility)
- Temperature, dewpoint, QNH

5. Select Runway

Choose appropriate runway based on:

- Wind direction
- ILS availability
- Difficulty constraints

6. Build Full Text

Compose the spoken ATIS following ICAO phraseology standards.

Example Outputs

SUPER EASY **Example**

München Information Charlie

Recorded at 1420 Zulu

Runway in use 26L ILS approach Transition level 70

Wind calm CAVOK Temperature 20, dewpoint 12 QNH 1020

Acknowledge receipt of information Charlie

HARD **Example**

Frankfurt Information Kilo

Recorded at 0835 Zulu

Runway in use 25L for landing, 25C for departure ILS CAT III approach Transition level 60

Wind 230 degrees 24 gusting 38 knots Visibility 400 meters, RVR runway 25L 550 meters Moderate rain, mist Broken 300 feet, overcast 800 feet Temperature 4, dewpoint 3 QNH 998

Low level wind shear reported on final. Braking action medium to poor.

Acknowledge receipt of information Kilo

API Patterns

Fetching ATIS Entries

Get entries with airport data:

```
GET /items/atis_entries?fields=
  id,
  information_letter,
  difficulty,
  full_text,
  wind_direction,
  wind_speed,
  visibility,
  qnh,
  airport.icao,
  airport.name
```

Filter by Difficulty

```
GET /items/atis_entries
  ?filter[difficulty][_eq]=medium
  &limit=10
```

Filter by Airport

```
GET /items/atis_entries
  ?filter[airport][icao][_eq]=EDDF
  &limit=5
```

Random Selection for Practice

```
GET /items/atis_entries
  ?filter[difficulty][_eq]=easy
  &sort=rand()
  &limit=1
```

Get Difficult Weather Conditions

```
GET /items/atis_entries
  ?filter[visibility][_lt]=1500
  &filter[difficulty][_eq]=hard
```

Ready to practice? The ATIS entries are designed to be read aloud, matching real-world broadcast cadence.

Aevoli Pilot Training Platform · ATIS Schema v1.0