



# CRYSTAL

## The ideal solution for reducing delays

With Crystal's accurate traffic predictions, FMP and ACC SPVR manage staff's workload and peaks while ensuring a smooth and efficient traffic flow!

CRYSTAL will support you to:

### Get closer to your staff's workload

- Local parameters integration via manual or automatic updates if connected to corresponding OPS ATM systems
- Dynamic airspace occupancy based on airspaces' specific rules
- Complexity computation relying on local airspaces dedicated parameters
- a Super-User account with Base Capacities and Flows update rights

### Focus on the key aspects

- Early warning feature (short-term traffic, next configuration change)
- Sustainable and peak overloads warnings

### Choose the right measures with

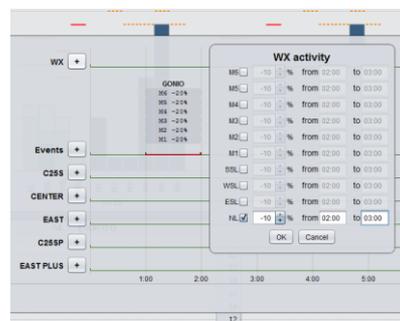
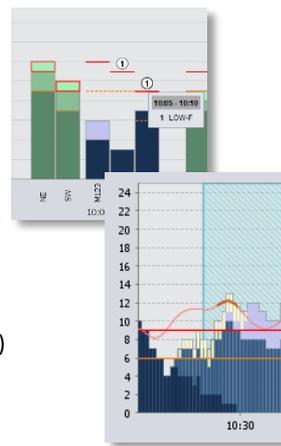
- Various types of detected intruders (internal, geographical, high/low filers)
- Short Term measures "What-if" simulation: Ground delays, MCP and Flight Level Cap with an easy-to-use electronic coordination between crystal enabled sites: users can draft a modified flight profile and check the resulting effect on sectors' loads before proposing it to other sites.
- Local flows available in tactical traffic load graph

### Follow up on your decisions with

- Various types of detected intruders (internal, geographical, high/low filers)
- Short Term measures implementation status and coordination monitoring with notifications
- Local flows available in tactical traffic load graph
- Regulations display

### Update tactical parameters using

- Sector configuration plan editor: prepare/update the daily configuration plan for upper and lower sectors, share it with Eurocontrol NM automatically via B2B Web Services.
- Capacity plan editor: TRA activation plan, Weather and Events plan, specific position presence plan, etc.

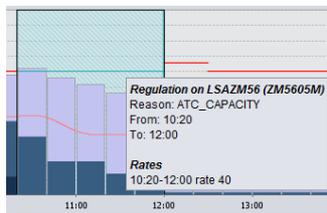


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## Be permanently synchronized with the ETFMS

- Receive updated flight profiles (EFD)
- NM B2B services connection (send/receive capacities, runway in use, configuration plan, regulations)



## Analyze your past decisions

- 2-hour live replay feature
- Full day predictions and parameters recording
- Offline full replay feature (investigation purposes, Read only)
- Offline training tool allowing to replay chosen dates base traffic and parameters but simulating different actions from the ones used that day. Live two-hour replay feature
- Offline full replay feature

## Benefit from proven ergonomics

- Quickly collapse and open sectors to simulate a new sectorisation.
- Compare sectorisations on a single screen to ease decision making.
- Responsive user interface made simple and automatically refreshing live data
- Carefully chosen graphs colors in order to easily identify traffic types belonging to upper and lower sectors or night sectorisation (upper + lower)
- Flight profile viewer displaying filed profile, highest profile and measure enabled profile (STAM). Sector times, route points, VFR route and more data are displayed.
- Detailed flight lists: load, intruders, measures



## Hold a modern and regularly updated architecture:

- based on an ATM dedicated framework developed in-house, regularly improved and used in other ATM system also operationally deployed
- used for more than 8 years in operation, crystal has proved to be highly reliable
- event messages are shared between independent services on a standard messaging bus solution
- built-in redundancy: automatic service switch-over
- fault-tolerant by design
- virtualized platform compatible
- data consistency is ensured between positions
- flexible architecture allows new sites creation using reusable and customizable components

## Upcoming in the roadmap:

- *electronic coordination with Eurocontrol NM to automatically send MCP (ground delay) proposals to be validated and created by NMOC*
- *electronic coordination with Eurocontrol NM to propose Traffic Volume Regulations to be validated and created by NMOC*
- *TWR-APP predictions, with a totally new TWR-APP positions complexity feature, local parameters "What-if" simulation and many more in fully dedicated clients for targeted airports*



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