



CROATIA
CONTROL

ANNUAL REPORT **2019**



Croatia Control Ltd

Annual Report 2019





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Message from the Director General



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In 2019 Croatia Control (CCL) delivered safe and effective air navigation services. It was the third consecutive year in which CCL experienced traffic increase on monthly basis throughout the year.

The total increase was 10.5% to almost 714,000 flights, which represents strong continuation of growth from the previous year. CCL earned EUR 114.0 million in total revenues that resulted in almost the same level compared to the previous year.

Excellent Safety Results

Safety is our top priority. The results of safety maturity studies over the last few years show our continuous improvement, reflecting our efforts to improve the safety management system and achieve as high air traffic safety level as possible.

In 2019 CCL achieved excellent results in the field of safety - the best on the level of Functional Airspace Block

Central Europe and among the best in the European Union.

We worked hard, both individually as well as in cooperation with our neighbors, to provide service that is environment friendly. Performance based navigation (PBN) procedures were implemented and will result in significant reduction in fuel consumption and noxious gases emission.

SES Award for SECSI FRA

By participating in previously implemented South East Common Sky Initiative Free Route Airspace (SECSI FRA), CCL directly contributes to the environmental protection by reducing fuel consumption and decreasing CO₂ and NO_x emissions by shorter flight times.

As an example of the European ATM network optimization, this project - which encompasses five ANSPs and the airspaces of six states - received the European Commission's Single European Sky Award 2019.

In line with CCL goals and required compliance with the EC Implementation Rules, we have successfully implemented and maintained various ATM and CNS systems and infrastructure.

Cooperation with our partners in COOPANS Alliance is based on continuous and intensive modernization of the main ATM system and represents our strategic orientation in state-of-the-art technology implementation.

In 2019, COOPANS ATM system was further upgraded with two new builds co-funded by the European Union CEF program to ensure and improve safety and efficiency of air traffic flow. A significant project of constructing the new MSSR Mode S radar site near Dubrovnik (Radar Konavle) was launched, and the installation is expected during 2020.

In-house Training of ATCOs

CCL pays special attention to its employees because they are its most valuable resource. Their knowledge, expertise and experience are recognized as the fundamental competitive strength of CCL.

Accordingly, training and education, communication and teamwork are high on the list of our priorities. This year was a very busy year, particularly in the area of training.

I am proud that for the first time in our history CCL started the process of comprehensive in-house training of air traffic controller candidates.

New Organizational Structure

In October we implemented new organizational structure after putting major efforts in corporate modernization process as a response to regulatory and technological requirements.

However, our organization and business operations will for sure undergo certain changes in the next period due to the impact of COVID-19 global pandemic that had the most severe effect on the aviation industry and air traffic.

This is an unprecedented situation, since for the first time in history of aviation the passenger traffic came to a halt and the aircraft were grounded, thus paralyzing the whole air traffic sector.


COVID-19 Challenges

After having experienced the unparalleled challenges of COVID-19, we have introduced certain measures aimed at protecting the health of our employees and ensuring business continuity. Together with other ANSPs, we are involved in EUROCONTROL's activities intended for air traffic recovery in the European airspace.

CCL has been participating in all activities aimed at mitigating and overcoming this unforeseeable business situation in the European air traffic.

Although this crisis has posed many challenges to us, we should see it as the opportunity to improve our business operations since that is the only way to maintain our current position and to remain a responsible employer.

Director General



Vlado Bagarić

Company Profile

History

CCL is a company owned by the Republic of Croatia, which provides air navigation services. It was founded in 1998, a year after Croatia's accession to EUROCONTROL. Croatia had already been a member of ICAO and ECAC since 1992. Before 1998, the Air Traffic Services Authority as a part of Ministry of Transport was responsible for the provision of air traffic services in Croatia.

Mission

Our mission is to provide safe and quality air navigation services to the complete satisfaction of our users and owner. We will achieve our mission by cooperating with our partners in the European air traffic management network and fostering highly qualified employees and a motivating environment.

Vision

We strive to be among the leading air navigation service providers in Central Europe. We will achieve our vision through a flexible organization, adapting to the needs of our users.



Organizational Values

- guarantee of safe and quality services
- personal responsibility
- competence
- excellence
- leadership
- rational decision making
- motivation
- team work
- open communication
- mutual respect
- trust
- empathy
- social responsibility

Core Business

CCL is certified for the provision of the following air navigation services (ANS) and functions:

- air traffic services (ATS), particularly air traffic control (ATC), alerting service (ALRS), flight information and pre-flight information service (FIS)
- communication, navigation and surveillance services (CNS)
- aeronautical information services (AIS)
- aeronautical meteorological services (MET)
- airspace management (ASM) function
- air traffic flow management (ATFM) function.



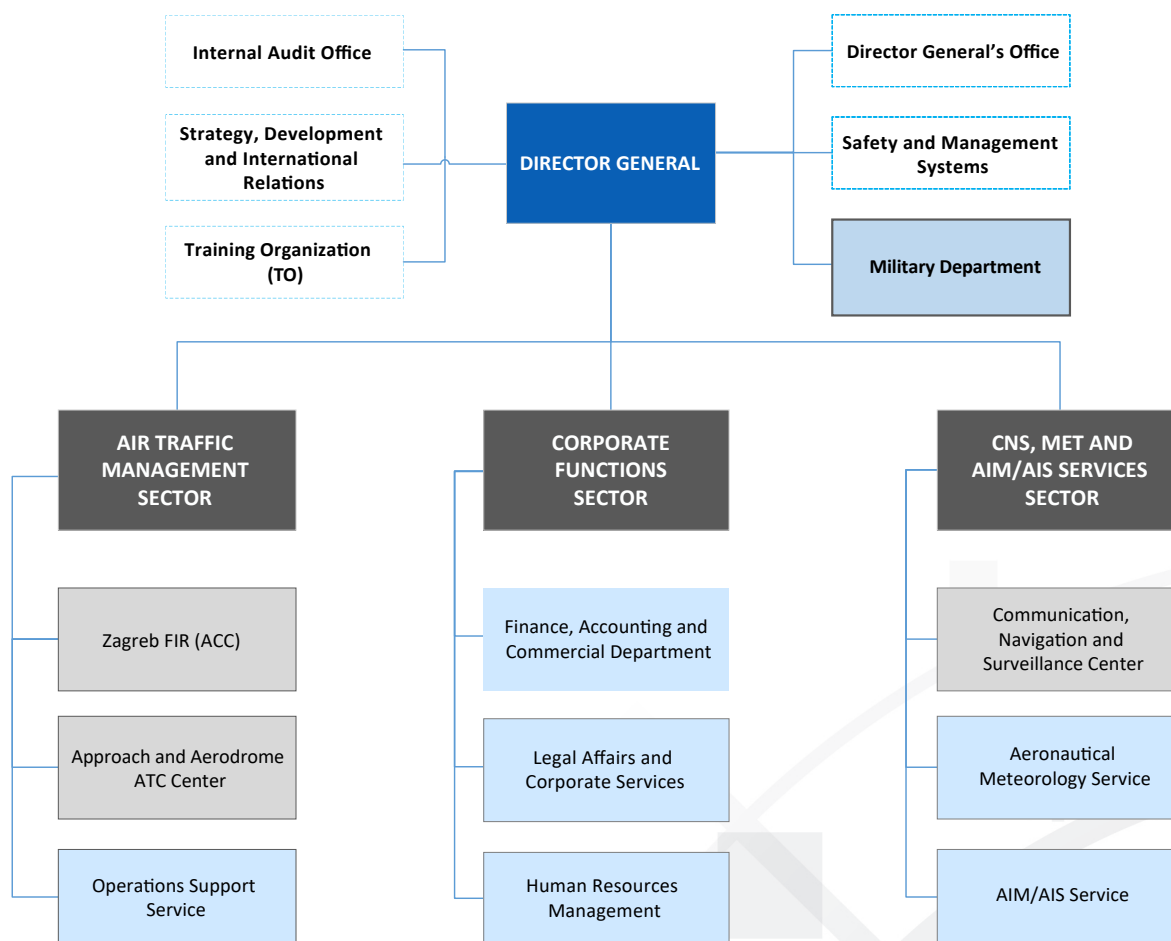
Organizational Structure

The new organizational structure entered into force on 1 October 2019.

The company is headquartered in Velika Gorica, and has five regional ATC units: Zagreb/Lučko, Istra/Kvarner, Zadar, Split/Brač, Dubrovnik and Osijek. Regional ATC units are responsible for the provision of approach and aerodrome air traffic control, technical support, meteorological and administrative services.

CCL is organized into three sectors:

- ➔ Air Traffic Management
- ➔ CNS, MET and AIM/AIS Services
- ➔ Corporate Functions.



International Cooperation

CCL participates in the development of European airspace through the cooperation in multiple organizations and associations such as ICAO, Eurocontrol, CANSO and Gate One.



COOPANS is an international partnership of ANSPs from Austria (Austro Control), Croatia (Croatia Control), Denmark (NaviAir), Ireland (Irish Aviation Authority), Sweden (LFV) and Portugal (NAV Portugal).

With Thales as the chosen supplier, COOPANS members implemented the same software in seven ACC centers (Zagreb, Vienna, Copenhagen, Stockholm, Malmö, Dublin and Shannon) and the implementation in Lisbon is under way.

COOPANS Alliance is developing its forward-looking, modern strategy based on four cornerstones: capacity, resilience, cost effectiveness and market.

Looking into the new decade and striving for the bigger role in the European environment, including

exploiting the arising market opportunities, the main future goals are the new cutting-edge technology ATM system and the new COOPANS organization. These goals are expected to bring further synergies among COOPANS partners, with emphasis put on joint development, infrastructure and the operation of the future harmonized assets.

With NAV Portugal as a new member, COOPANS is the largest "ANSP" in Europe by many parameters or performance indicators. The COOPANS' vision is to stay on top by taking proactive steps. With the aim to do so, COOPANS plans for the forthcoming years to strengthen its joint investments and extend its areas of cooperation, benefiting from track record of successful system implementations and unique position within Europe.

FAB CE

The Functional Airspace Block Central Europe (FAB CE) is a joint initiative of Croatia, Austria, Bosnia and Herzegovina, Hungary, the Czech Republic, Slovakia and their air navigation service providers. The establishment of FABs is an obligation arising from an interstate agreement under the Single European Sky regulation.

The aim of this regional association is to increase air traffic safety, reduce delays and costs for airspace users and protect the environment.

There was a number of important achievements in 2019 focusing on several key areas. The most important activities delivering the benefits to airspace users were:

- ➔ FAB CE Strategy for 2020-2030 which is fully aligned with the European Airspace Architecture Study (EAAS) vision has been completed in 2019.
- ➔ FAB CE has established Airspace Task Force (ATF) to study further areas of regional cooperation with the aim of establishing an airspace design optimized for all airspace users aligned with the EAAS activities. FAB CE invited the Network Manager (NM) to participate directly in the ATF activities and started to

gather all requirements and views on NM roadmap proposals for a major re-sectorisation of FAB CE airspace.

- ➔ The FAB CE states, together with their neighboring partners, are still at the frontline of the Free Route Airspace (FRA) implementation in the region. The NM confirmed that FAB CE is the most advanced FAB in terms of FRA deployment and very few elements are missing from the complete deployment of FRA procedures in the FAB CE area.
- ➔ The NAVAID optimization project, which will improve interoperability and data-sharing through the optimization of navigational aid infrastructure, reducing duplication and unnecessary complexity, progressed significantly in 2019.
- ➔ In 2019 FAB CE identified and initiated a number of cooperation activities in the technical domain. Those include a coordinated approach to ADS-B deployment, coordinated monitoring and protection of surveillance frequencies, common approach to datalink monitoring. Some ANSPs participate in the smart procurement of spare parts and equipment suppliers were contacted to investigate procurement pooling arrangements.

Countries & ANSPs



Total number of Flights: **2.393.523** (2019)

Growth: 3.5% on 2018

Arrivals

372.958

Growth 5.1% on 2018

Departures

372.862

Growth 5.0% on 2018

Overflights

1.573.847

Growth 3.2% on 2018

Internal flights

73.856

Decrease 2.7% on 2018

Flights share by market segment

Traditional Scheduled 54%

Lowcost 31%

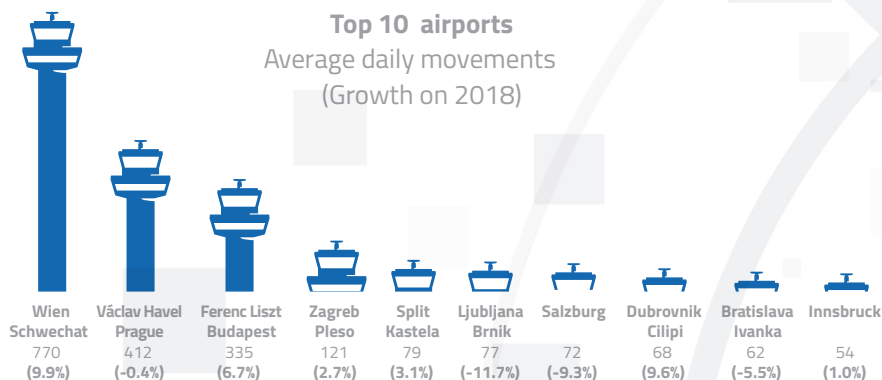
Business Aviation 5%

Charter 5%

All-Cargo 3%

Others 2%

Top 10 airports Average daily movements (Growth on 2018)



FAB CE Punctuality

96.5%
on time*

3.5%
with more than 15 minutes delay



*with less than 15 minutes delay



COOPANS extended the scope of cooperation in 2015. COOPANS became an alliance which, in addition to the technical and operational cooperation, opted for joint approach and participation in SESAR Joint Undertaking, SESAR 2020, SESAR Deployment Manager and A6 Alliance in which it cooperates with the largest ANSPs in Europe.

Being a member of SJU and SDM, CCL has an active role in the development and deployment of the newest ATM

functionalities in the European ATM system in the next long-term period, and it has access to the available EU funds with the aim of strengthening its position in the European environment and yielding positive financial results.

In 2019, the main CCL's tasks regarding SESAR 2020 program were to execute and finish the activities foreseen in Wave 1 projects, as well as to prepare the activities and sign the contracts related to Wave 2 projects. All activities are coordinated under COOPANS Alliance to derive maximum benefit for the common COOPANS ATM system.

In 2019, the main tasks of the SDM were to support all stakeholders awarded for PCP-related projects in CEF Transport Calls 2014, 2015, 2016 and 2017, to prepare the activities related to CEF Transport Call 2019, and to deliver a new version of Deployment Program.



Co-financed by the Connecting Europe Facility of the European Union

Connecting Europe Facility (CEF) is the new funding instrument for the period 2014 – 2020 intended for financing of EU infrastructure priorities in the field of transport, energy and digital technology.

It defines the requirements, types and procedures for the European financial support to the projects of common interest within the trans-European networks.

INEA 2019 CEF Call for Proposals was published in October 2019, and the results of evaluation of the projects applied are expected to be published in September 2020. The evaluation will be done by the European Commission and INEA.

CCL applied together with other COOPANS partners, to be a "silent contributor" to the "IOP Foundation" project, led by Eurocontrol. Being a "silent contributor" means that CCL and COOPANS will not use any co-financing for their participation in the project.



Corporate Governance

CCL's governing bodies are the Management, the Supervisory Board and the Assembly.

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Management

- **Vlado Bagarić**
Director General

There are three main sectors and Military Department managed by the following executive directors:

- **Nenad Galić**
ATM Executive Director
- **Alen Sajko**
Executive Director of CNS, MET and AIM/AIS Services Sector
- **Nino Karamatić**
Executive Director of Corporate Functions Sector
- **Nedeljko Zmajić**
Executive Director of Military Department

Supervisory Board

The Supervisory Board monitors the activities of the Company. It appoints the Director General of the Company on the basis of open competition for a period of five years.

In 2019, the members of the Supervisory Board were:

- **Dinko Staničić** – President
- **Ksenija Bertić** – Member
- **Marko Neveščanin** – Member
- **Ivan Selak** – Member

Assembly

The Assembly consists of:

- **Oleg Butković**, Minister of the Sea, Transport and Infrastructure – President
- **Zdravko Marić**, Minister of Finance – Member
- **Damir Krstičević**, Minister of Defense – Member



Operations and Infrastructure

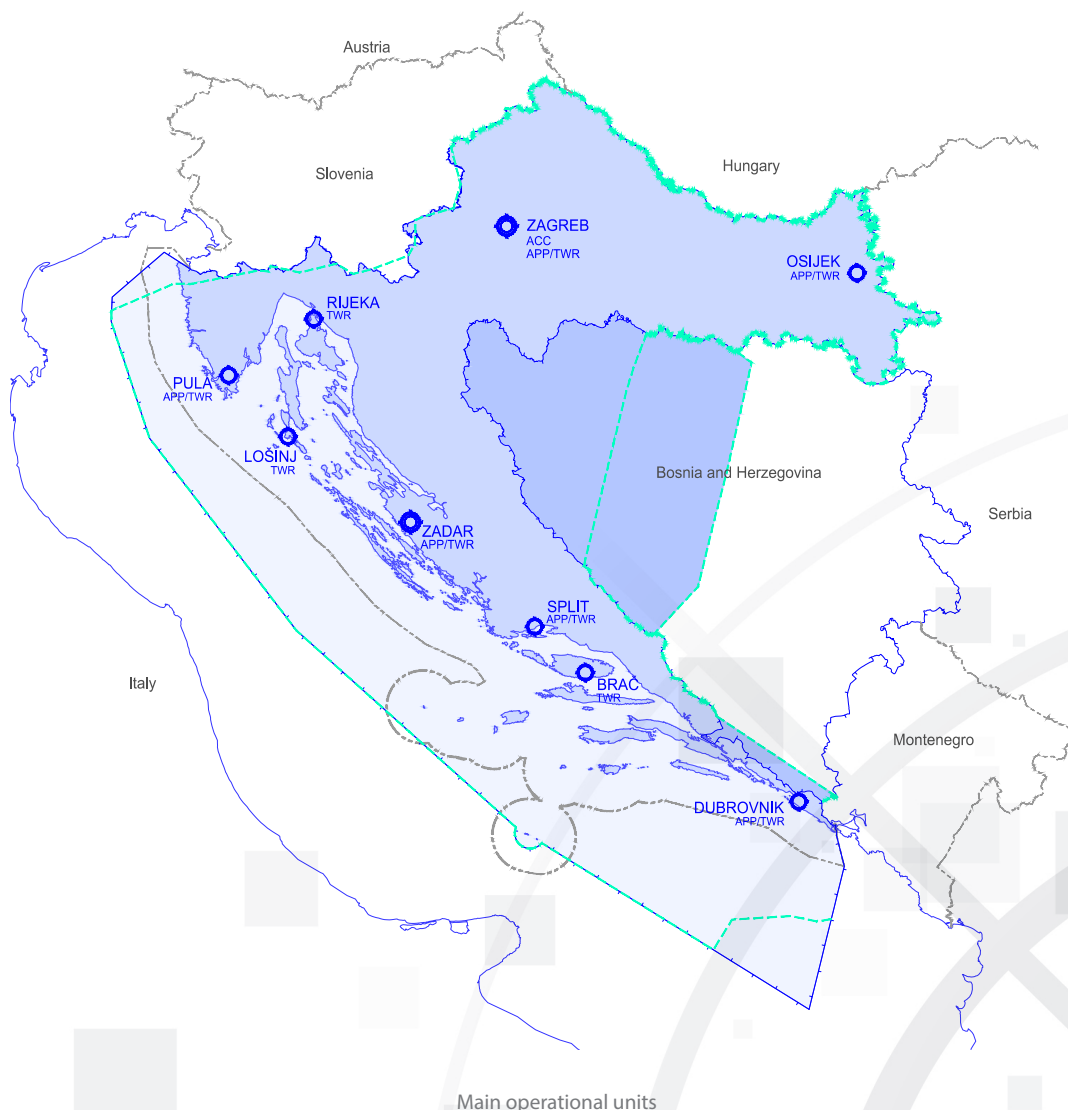
Operational Units

CCL's main operational units are as follows:

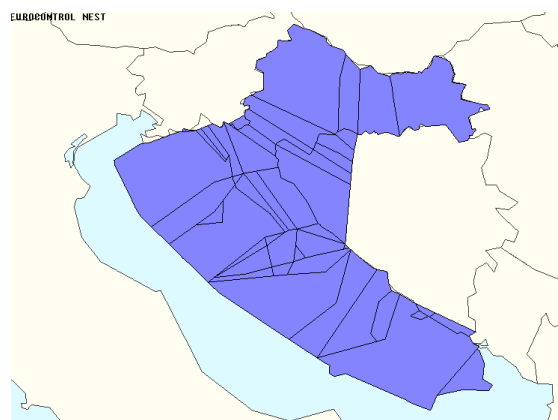
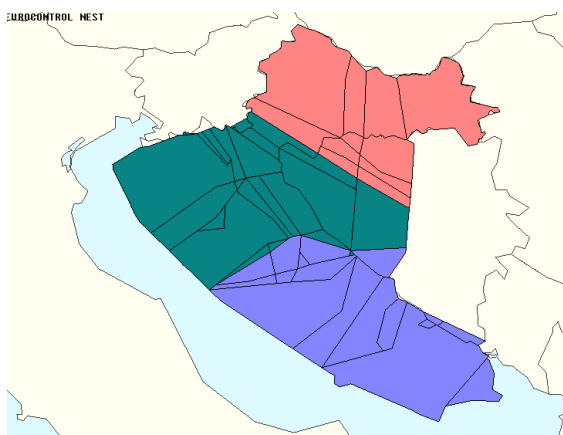
Zagreb Air Traffic Control Centre (ATCC):

- encompasses the airspace of FIR Zagreb (outside TMAs and CTRs if not otherwise agreed by the relevant Letter of Agreement) from GND to UNL
- airspace of FIR Sarajevo defined according to the Agreement on delegation of ATS services between the Republic of Croatia and Bosnia and Herzegovina (as well defined in Letter of Agreement with ATCC Sarajevo)
- also encompasses the airspace where the ATS provision has been delegated from other organizations to CCL, excluding FIR Zagreb airspace where the ATS provision has been delegated to other organizations
- also includes Zagreb and Lučko Aerodrome Control which provide tower control services at Zagreb and Lučko aerodromes and Zagreb APP which provide approach control services in Zagreb TMA from Zagreb ACC premises

Regional ATC units providing approach/tower control services – Zagreb/Lučko, Istra/Kvarner, Zadar, Split/Brač, Dubrovnik and Osijek.

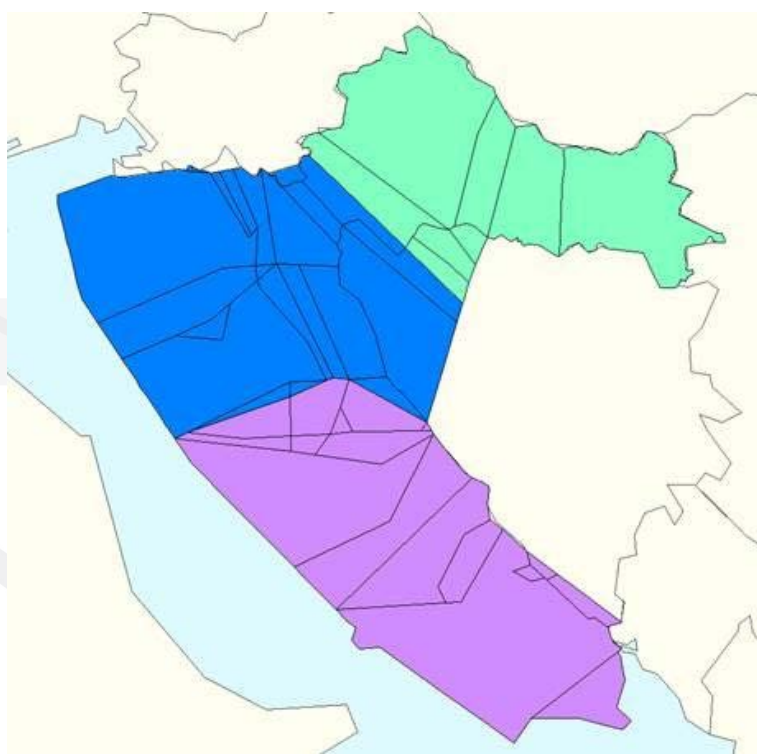


Through the provision of ATS for Bosnia and Herzegovina, CCL has been providing ANS in the borderless manner, which means that borders of sectors extend across national borders, thus contributing to improved efficiency and flow of international air traffic.



ACC Zagreb area of responsibility (AoR) in the "upper" and "lower" airspace

On December 5, 2019, the provision of ATS was transferred from CCL to BHANSA from FL325 to FL660 in a part of BHACC FIR, east of "KOMAR line". This successfully ended BHANSA phase 2 process.



ACC Zagreb AoR in the upper airspace after BHANSA phase 2 completion

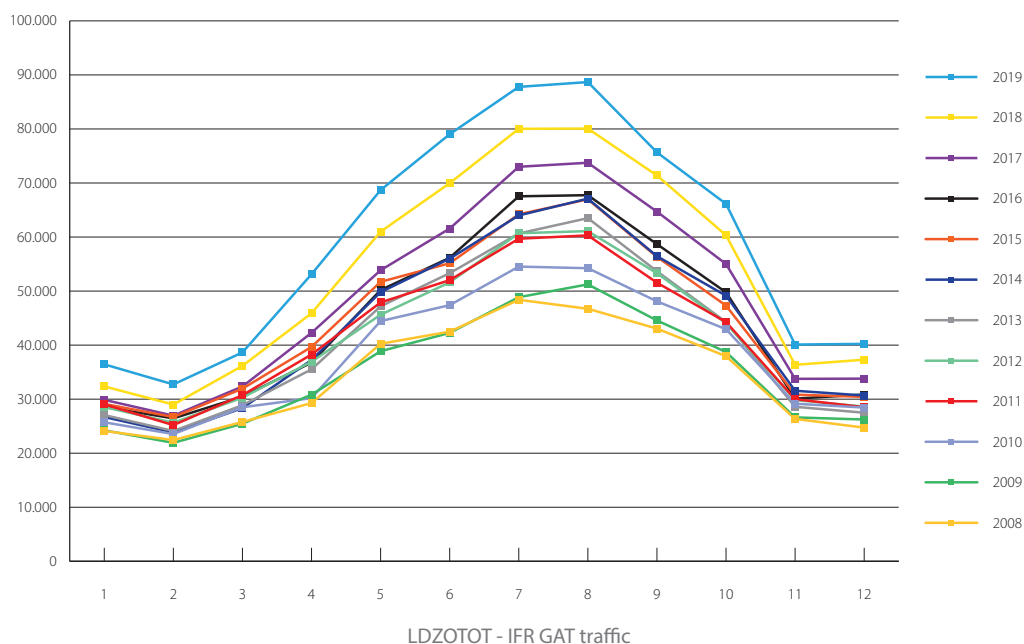
Traffic Flows

Good economic indicators in Europe in 2019 contributed to the increase in traffic on network level, especially on South-East Axis on which the Croatian airspace is situated. This area was dominated by flights from Germany, Great Britain and other Western European states towards tourist destinations in Greece and Turkey.

The year 2019 was the third year in a row in which CCL experienced traffic increase on monthly basis through-

out the year. In 2019 the total increase was 10.5%, which represents strong continuation of growth from the previous year, when the recorded growth had been 10.2%.

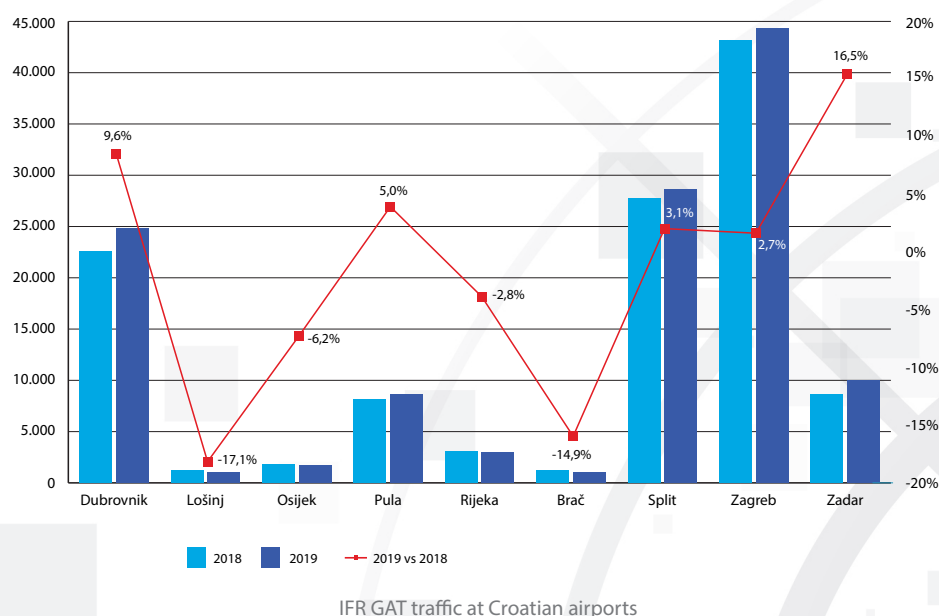
Five companies with the largest number of en route flights in the Croatian airspace under the CCL control comprised low-cost companies (WZZ, RYR, EZY, EWG), as well as one national company, Turkish Airlines.



Unlike in the two previous years when traffic growth at almost all Croatian airports was counted in two-digit numbers, in 2019 traffic growth was somewhat lower, while at some of the few smaller airports traffic decreased when compared to 2018. The only excep-

tion was Zadar Airport, where traffic growth was 16.5% in 2019, which had been the highest growth in the last three years.

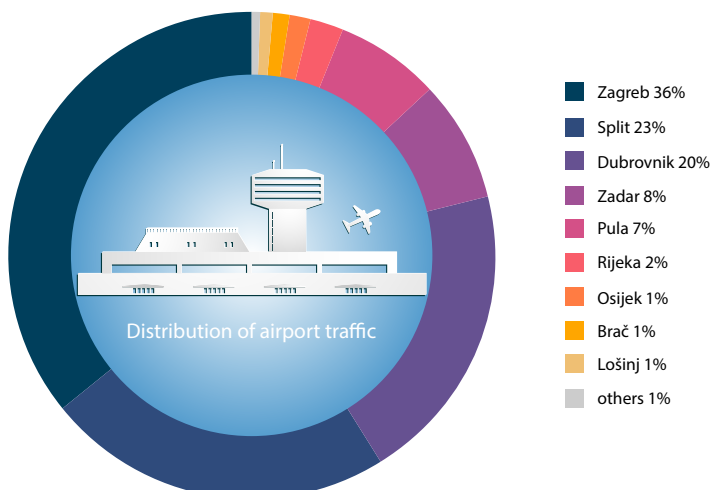
The total increase in airport traffic at all airports in 2019 was 5.1%.



Zagreb Airport, which is the least affected by seasonality, had the largest share in total traffic.

Other Croatian airports have significantly more traffic in the summer months due to tourist season.

Their share in total operations has been increased with the increase in traffic in the last few years.



Operational Improvements



New set of OLDI messages is exchanged with Austro Control, Slovenia Control and HungaroControl. No manual log-on by flight crew or manual start of CPDLC connection by ATCO is needed, but automated process is implemented. LOF and NAN message exchange strengthens CPDLC usage by the ATCOs and flight crews, thus reducing the workload.

Performance Based Navigation (PBN), the airspace concept based on aircraft performance was formulated. This concept serves as an interface between the procedures of the upper airspace and the route network for precise spatial navigation in lower airspace (TMA), SID/STAR instrumental navigation procedures and final approach on the airports.

SID/STAR procedures for airports in Zagreb and Osijek were published in April 2019, and those for Dubrovnik, Split and Brač in December 2019. CCO and CDO were introduced within PBN project, which is a part of SID/STAR RNAV procedures.

This concept facilitates for the users the approach procedures at all airports, and it simplifies PBN implementation. The expected gains arising from the optimization of the traffic flow and the reduction of noxious gases also include reduction in airlines' costs and ATCOs' workload etc.

Moreover, Mode S airspace is extended down to GND, and RNAV5 navigation specification is implemented.

Civil-Military Coordination

In Croatian airspace CCL is also responsible for the provision of services to the Ministry of Defense of the Republic of Croatia and its Air Force.

For the purpose of maintaining a high level of safety and quality, relevant air traffic data are regularly exchanged between these two parties, which is the basis for creating the conditions for an efficient protection of the airspace without affecting the safety of all users.

Service provision for ASM certificate currently supports ASM level 3 or tactical ASM. Tactical ASM covers real-time use of airspace allowing safe OAT and GAT operations. It consists of activation, deactivation of airspace segregations and OAT/GAT coordination.

To support ASM level 3 service, CCL took part in forming a joint civil military unit – Airspace Management Cell (AMC) in 2014. AMC deals with pre-tactical ASM also known as ASM level 2 and supports all ASM level 3 operations.



AMC Portal

As CCL recognizes the importance of ASM within ATM, it is one of the few ANSPs that developed their own ASM system, the AMC Portal. Following the international trends and expansion of UAS operations, CCL identified the new type of user and safety impact of UAS operations on ATM earlier than most ANSPs, and it continuously makes efforts in safe integration of UAS operations in ATM environment with the aim of guarding achieved levels of flight safety and current standards.

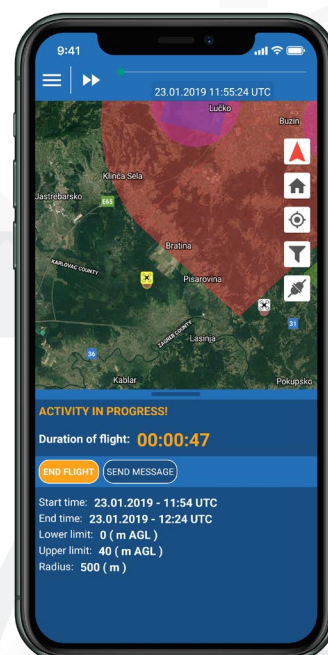
In 2019 ASM department released a new version of the ASM system AMC Portal with functionalities that support ATC tactical approval of UAS operations and direct communication through AMC Portal.

Throughout 2019 the ASM department was heavily involved in custom designed courses for government and civil service UAS operators, working closely together with all emergency services and first responders that embraced the capabilities of UAS operations.

CCL plays a key role as a hub of ATM knowledge that takes lead and coordinates all state UAS operations simultaneously working on awareness, education and coordination of all stakeholders.

CCL is not only a regional leader in ASM but also on European level. That is achieved by going beyond of just

conforming with the regulatory requirements of ASM as well as by changing the paradigm and shaping the new standards, especially in the field of UTM/ATM integration.



Environment

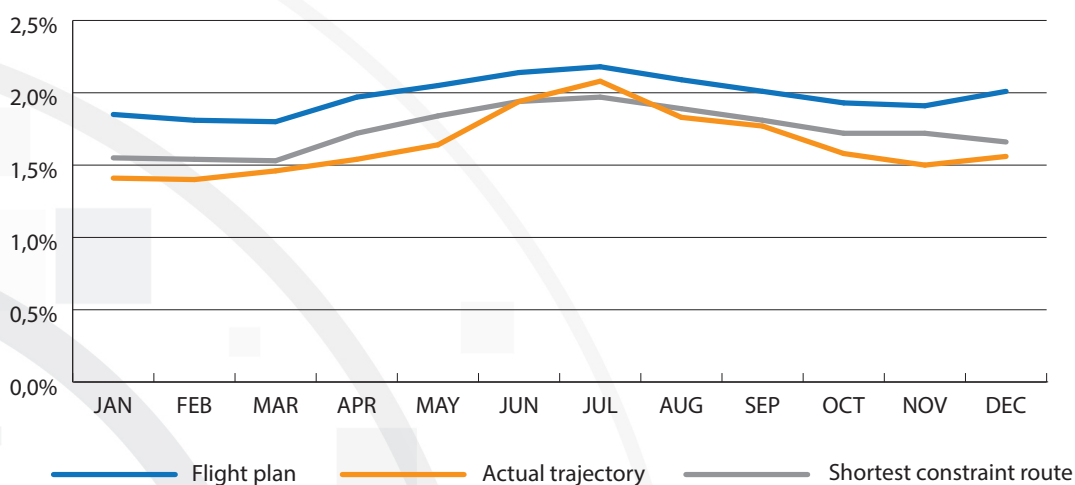


The performance area of environment in the performance plan includes the horizontal en route flight efficiency indicator which compares the length of the en route part of the actual trajectory and the corresponding portion of the great circle distance (GCD).

In 2019 inefficiency was merely 1.71%, which is related to the initiative previously implemented among the ANSPs on SE Axis that took place in 2018, launching a project aimed at further optimization of airspace utilization by merging two adjacent FRA areas (SEAFRA and SAXFRA) into a single SECSI FRA area.

This initiative renders the advanced possibilities to the airlines to use shorter routes in the area covering the airspace above six states - Austria, Slovenia, Croatia, Bosnia and Herzegovina, Serbia and Montenegro. It has been estimated that the implementation of FRA concept in a wider area might have a more significant impact on the total flight efficiency, thus having a positive effect on the environment.

It should be noted that the values of actual savings completely depend on how the companies make their plans and on their commitment to use the offered route options.



Horizontal en-route flight efficiency (Croatia) in 2019

This airspace concept enables connecting of en route/AC FRA airspace to the network of RNAV-1 SID/STAR procedures under TMA responsibility, among other things with the purpose of reduction of noxious gases emis-

PBN concept also implies complementary changes such as Continuous Descent Operations (CDO), which have also been introduced within the implementation framework. The improved efficiency of Continuous Climb Operations (CCO) and Continuous Descent Operations may result in significant reduction in fuel consumption and CO₂, as well as in noise in the vicinity of airports.

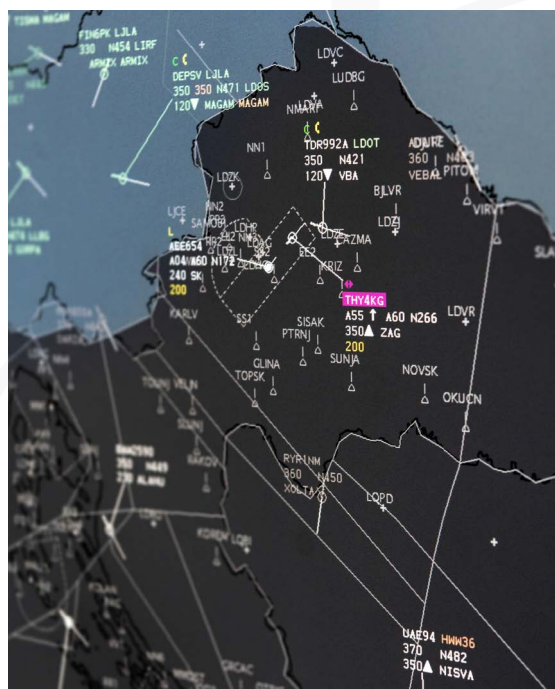
In order to monitor CCO and CDO indicators, PRU developed a special methodology which also contains the results of measurements for each particular airport.



Overview

Highly qualified engineers and technicians have continuously been engaged in the supervision, control, maintenance and upgrading of the following systems: ATM data processing systems, voice and data communication systems, aeronautical radio-navigation systems, surveillance systems, power supply systems, transport telecommunication and network systems, meteorological systems and business IT systems.

Major projects are described in the sections below.



ATM Systems Upgrade

The COOPANS ATM system in CCL was further upgraded with two new builds, which strengthened its world-class status.



Both COOPANS Builds 3.4.2 and 3.4.3 are co-funded by the European Union CEF program. The former introduced handful of functional and operational improvements with emphasis on civil-military coordination, while Build 3.4.3 was the final software preparation for hardware upgrade.

Following the Build 3.4.3 implementation, the system was seamlessly upgraded to the new generation of servers and working stations, which will enable capacity and maintainability requirements in the following years. Furthermore, the systems in Pula, Split and Zadar were upgraded with new and bigger displays to increase controller awareness.

The first phase of Aeronautical Information Management System project has been completed, which encompassed replacement of the previous aeronautical information database system.

DATA-COM Domain Projects

The project aims to build a new national ATM grade IP network able to deliver a specific set of network services required for operational use in ATM at central site and remote locations. The integration of all Airports and Surveillance sites into a single IP-based network reduces the maintenance costs by eliminating the need for legacy lines to each site and enables flexibility in ASM (Collaborative Decision-Making - CDM, dynamic ASM,

strategic conflict management and FUA).

In 2019, the implementation activities on MAGNet project were focused mainly on design and safety domains. Due to high complexity of ATM operational environment and the consequent slow progress, our partner responsible for network solution design had to reorganize its initial project team. After the introduction of regular management meetings, progress with the network design was noticeable and resulted in the approved High Level Design Document in December 2019. However, due to accumulated delay in the design phase, finalization of the Bills of Materials and Technical Specification for the hardware was postponed to 2020.

After the initial Functional Hazard Assessment with basic safety objectives approved internally in 2018, the work on Safety continued throughout 2019 and beyond. The contractor introduced a new Safety team with the proven international safety assessment references from ATM industry. Draft Preliminary Safety Assessment document together with the software safety tool was published and delivered to CCL for approval.

In order to support the requirements of G/G VoIP international communications without compromising security objectives, modification of new Network Information Security Block started. The tender was published, contract signed and hardware delivered by the end of 2019. Project will continue in 2020 with the final milestone planned for Q3/2020.

Installation, testing and site acceptance of NewPENS (Pan European Network Services) equipment was finished in September 2019, and the transition phase of the project started. The transition phase goal is to migrate all international communication services from present PENS to NewPENS. This phase should finish by the end of Q1/2020 so PENS equipment and services could be decommissioned and contract executed.

Fiber optics project started in 2018 and continued throughout 2019. The goal was to build technologically modern and reliable communication infrastructure of sufficient capacity, immune to electromagnetic interference from power lines and atmospheric discharges for remote sites located in runway zones of Zadar, Dubrovnik and Rijeka airports.

Zadar part of the project, which started in 2018, continued through 2019 following the slow dynamics of the construction works at Zadar. The delay in construction works at Zadar airport resulted in significant delay in fiber optics planned milestones. The final milestones are expected to be finished in Q1/2020. A similar project continued at Dubrovnik airport. Because of extensive construction works at the airport's operational surfaces, there has been a slight delay to the fiber optics project that will be finished in 2020.

After successful start and the production of technical and other formal documentation for the fiber optics project at Rijeka Airport, the investment was postponed.

VOICE-COM Domain Projects

The Project of the Replacement and Upgrade of VHF/UHF Radio Systems continued in 2019. Its goal is to replace and modernize the existing older generation radio system so that 8.33 kHz voice channel spacing requirements below FL195 could be implemented and migration to VoIP supported.

The installation of 11 radio sites has been completed, tested and 8 radio sites were put into operation.

At Guslica site, Northern Adriatic area, the construction work on radio site facility started in order to upgrade the VHF/UHF radio network with an additional VHF site.

The group of projects for upgrading all VCS/BVCS to support the migration to VoIP continued in 2019. Replacements of TMCS, software upgrade to Release 7.1 and integration of VoIP interfaces, proxies and Session Border Controllers (SBC) on remaining systems were finished. Zagreb ACC and Zagreb TWR VCS were configured for SAT VoIP for non-sector delegation use cases. Media Gateway (MGW), a system used to connect BVCS Zagreb ACC to VoIP was also partly configured for SAT on an interface side. Realization of this project is one of the enablers for the implementation of VoIP in ATM set

as an aim in ESSIP/LSSIP (Eurocontrol/Local Single Sky Implementation Plan).



The replacement of VCS system for Rijeka site, extensions of VCS and BVCS Split, Pula, Dubrovnik and Zadar (8 systems in total) with additional controller working positions (CWP) and radio interfaces, and VCS SIM/TDS (and test facility) upgrade for G/G and A/G VoIP emulation, test and training purposes have been contracted. Installation of additional CWPs at remote sites will be synchronized with the installation of new TMA consoles under the console project.

The project for the replacement and modernization of VRRS in Zagreb ACC, Pula, Zadar, Split and Dubrovnik for the migration to VoIP continued in 2019. The Contract has been signed and preparations for Factory Acceptance Testing are ongoing.

As the integrated VCS intercom solution has been successfully tested at Zadar site, installation will be synchronized with the replacement of the TWR consoles.

SUR Domain Projects

The Project of Installation of new MSSR Mode S radar site near Dubrovnik (Radar Konavle) is under execution. During 2019 site design has been defined and approved and legal procedure for obtaining building permission has been initiated.

The Tender for radar system, antenna radome and equipped shelter, as well as tender for site construction service has been conducted. Finalizing of site construction and equipment installation is expected during 2020.



In order to enable future extension of the SUR system, implementation of national WAM system is considered. Project initialization and realization is expected under RP3.

NAVAIDS Projects

Regarding the project of NAV system modernization, the second phase of replacing ILS IDU was completed in 2019 as well as replacement of VOR/DME in Dubrovnik.

Two new NAV systems were installed and put into operation: VOR/DME NTL on the island of Lošinj and ILS ISJ RWY11 at Osijek airport.

AWOS/MET Domain Projects

Upgrades/modifications of existing AWOS/AMS systems were launched and partially completed (new masts and site relocations in Dubrovnik), to be finished in 2020 (wind mast replacement in Pula). Split and Pula systems upgrade was contracted, while SW update will be finished in 2020 due to the manufacturer's delays. Additional sensor was tested for Pula and was found unsatisfactory. Another sensor test is scheduled for 2020.

The project aimed to replace the old and implement new AWOS systems (8 systems, some with ATIS and/or VOLMET, where appropriate) continued with reduced intensity due to limited availability of experts needed to work on the project. Safety activities were completed, and civil works documentation (for infrastructure construction and update, where needed) is being prepared. Activities are scheduled to intensify in 2020.

Under VAMS50 project, Osijek Airport system was upgraded with additional wind measurement site (due to installation of ILS for RWY11). Further activities are scheduled for 2020 (Osijek RWY29 wind mast relocation, upgrades of Lučko and Lošinj systems depending on reconstruction projects at respective airports).

CCL Centralized Technical Monitoring and Control System

CCL is increasingly introducing automation in order to increase the efficiency of monitoring functions. The ben-

efit of this process is that less staff presence on remote sites is required, which enables a more rational and cost-efficient use of technical staff involved in technical monitoring, control and maintenance of the systems concerned.

Thereby quality and safety of ATM service provision is enabled and a possibility of information exchange about the condition of CNS systems at national and international levels is introduced.

In 2019 two TMCS pilot projects have been technically implemented:

- ➔ TMCS_NAV_PL (Technical Monitoring and Control Systems for aeronautical navigation facilities in Pula region) and
- ➔ CroTMCS_TEL (Technical Monitoring and Control Systems for telecommunication equipment on national level).

The pilot projects were implemented in cooperation with the Czech integrator ELVAC Solutions s.r.o. which has ten years' experience in TMCS implementation in the Czech ANSP. CroTMCS pilot projects are based on Citect SCADA environment and fully customized for CCL technical requirements. In coming years the CroTMCS project is planned as overall solution on national level.

Reconstruction of Buildings and Infrastructure



The reconstruction of the new power supply system in the ACC building is completed, while the major reconstruction of the air conditioning system in HQ and ACC is almost completed. The replacement of diesel generators at 27 locations was contracted, and its implementation is under way.



2019 Investment Plan

Full list of projects that had been scheduled for implementation in 2019

- ATM System Upgrade
- DATA-COM Systems Modernization
- VOICE-COM Systems Modernization and Replacement
- NAV Systems Modernization and Replacement
- Surveillance Systems Modernization and Replacement
- AWOS/MET Domain Projects
- Reconstruction of Buildings and Infrastructure
- ICT Systems Modernization
- MET-ATM Domain Projects
- Telecommunications Infrastructure Modernization
- CCL Centralized Technical Monitoring and Control System
- FUA Project
- Security and Protection of Sites Improvement
- Modernization of TWR and TMA Working Positions

Plans for Investments in the Coming Years

Projects scheduled for implementation in 2020 and forthcoming years

- ATM System Upgrade
- COOPANS ATM System Upgrade ATM C1
- DATA-COM Modernization
- DATA-COM Infrastructure Upgrade (Data-COM-MAGnet)
- VOICE-COM Systems Modernization and Replacement
- A/G Voice Communications Systems Upgrade
- G/G Voice Communications Systems Modernization
- NAV Systems Modernization and Replacement
- Radar Konavle
- AWOS/MET Domain Projects
- Reconstruction of Buildings and Infrastructure
- Modernization of HVAC and Electric Power Systems
- ICT Systems Modernization
- IPIS System Modernization
- MET-ATM Domain Projects
- FUA Project
- Security and Protection of Sites Improvement
- Modernization of TWR and TMA Working Positions



Safety and Management Systems

Air traffic safety is of paramount importance to CCL. In order to further improve the quality of service provided to our users, Safety and Management Systems were established at the corporate level. This organizational unit reports directly to the Director General.

Safety and Management Systems is responsible for the organization-wide management system including:

- safety management
- quality management
- environment management
- security management
- risk management
- performance management
- change and project management
- compliance monitoring
- occupational health and safety management
- internal control and auditing.

Beginning in 2018, two major changes significantly affected the performance of Safety and Management Systems and CCL in 2019: new organizational structure and Commission Implementing Regulation (CIR) (EU) 2017/373.

New organizational structure has also changed the structure of Safety and Management Systems, the allocation of duties and responsibilities, the allocation of resources, as well as the documentation.

The new defined requirements for the provision of ATM and ANS include challenging requirements for safety, management system and change management.

Safety and Management Systems has successfully implemented all those requirements and CCL has received the certificate for the provision of ATS, CNS, MET and AIS services and ASM and ATFM functions pursuant to CIR (EU) 2017/373 issued by Croatian Civil Aviation Agency. Compliance monitoring function has also been established.

Safety Management

High level of safety of ANS provided by CCL has priority over commercial, operational, social and any other aspects of business. CCL's Safety Management System (SMS) is aimed at systematic and proactive achievement of an acceptable level of safety, thus making valuable contribution towards the safety of European air traffic in general.

Safety Management System

SMS, including a safety management function, has been in place since 2007. The main component of SMS is the Safety Management Manual which defines SMS organization and processes as well as basic SMS procedures, in order to comply with the SMS requirements laid down in national regulations, SES requirements and European safety standards.

Safety Performance

Measuring and monitoring safety performance constantly helps us improve our safety level and service. CCL key safety performance areas are in line with the Commission Implementing Regulation (EU) No. 2019/317 laying down a performance and charging scheme in the single European sky and repealing Implementing Regulations (EU) No 390/2013 and (EU) No 391/2013 the purpose of which is:

Level of Efficiency of Safety Management (EoSM)

In 2019 CCL managed to increase the level of efficiency of safety management by 5 percent (overall score is 92%).

CCL achieved excellent results in the field of safety, the best results on the level of FAB CE when taking into consideration the defined indicators referred to in the Performance Plan.

All Key Performance Indicator (KPI) targets defined in the Performance Plan for 2019 have been met, and the trends in Performance Indicators (PIs) that are being monitored are positive.

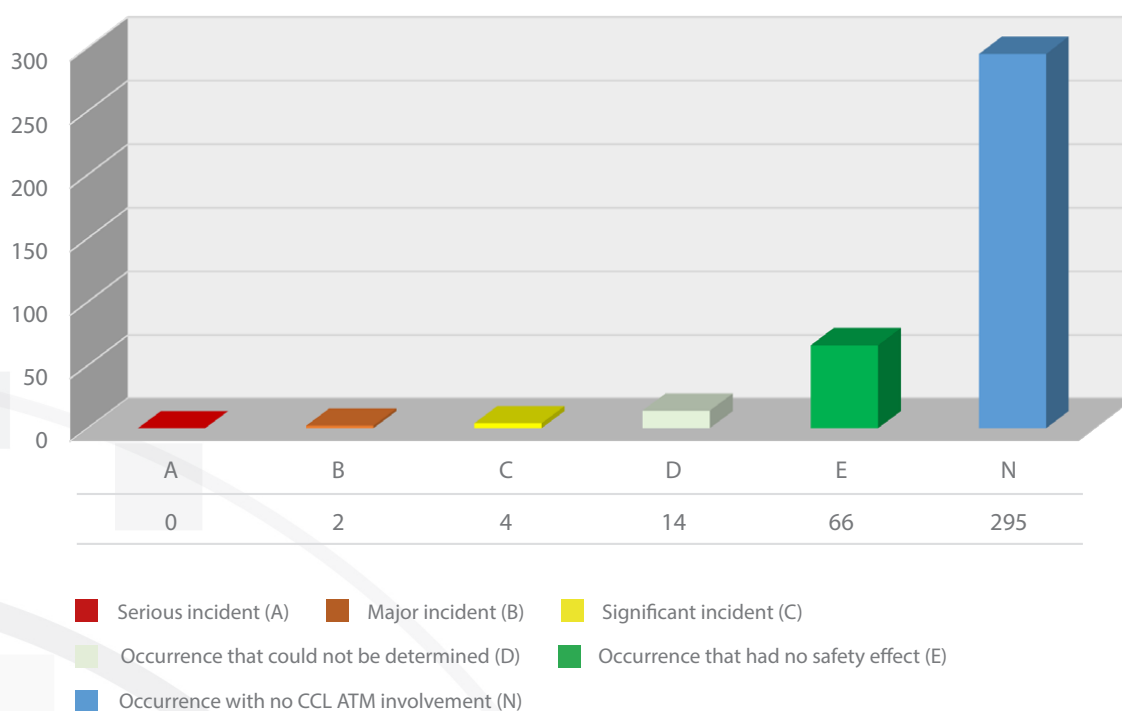
The results for the most important KPI in the key performance area of safety - the effectiveness of safety management - must be stressed, since CCL's results were the best in FAB CE and among the best in the EU.

	2015	2016	2017	2018	2019
Austro Control	90	91	91	91	91
Croatia Control	77	82	85	87	92
ANS CR	83	83	83	83	83
HungaroControl	78	77	79	77	84
LPS SR	88	86	89	89	89
Slovenia Control	74	70	76	77	73

Classification of Severity of Occurrences Using Toolkit for ATM Occurrence Investigation (TOKAI)

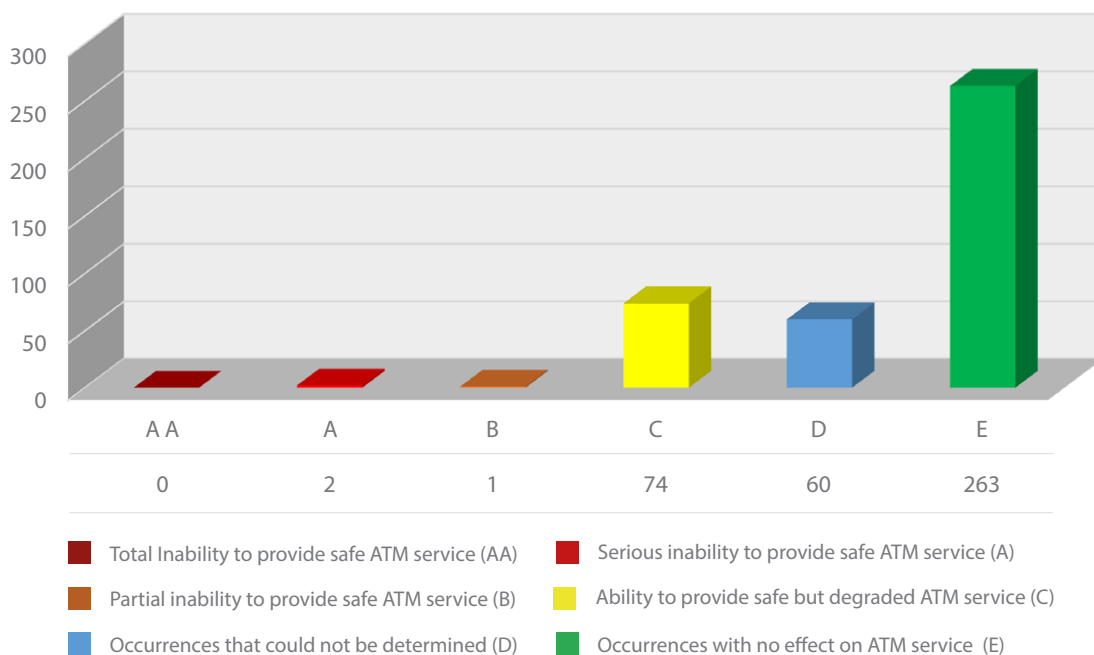
In 2019 there were 781 reported safety occurrences, 381 of which were ATM occurrences and 400 specific occurrences in ATM.

Severity of ATM occurrences were classified as follows:

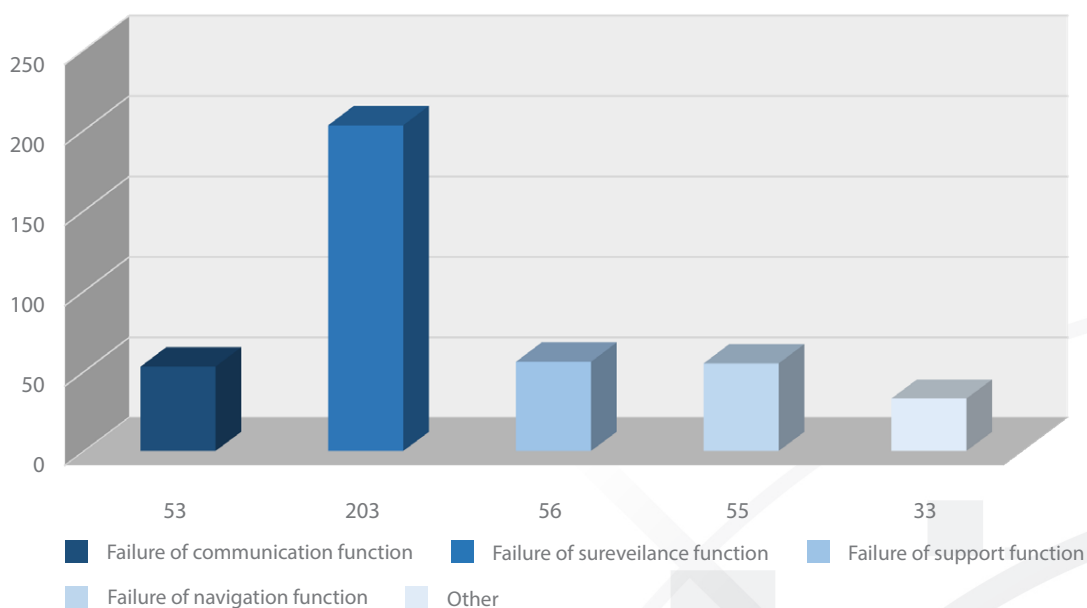


There were 6 cases of SMI, 1 of which included direct involvement and 3 indirect involvement of CCL.

In 18 cases of RI, CCL was indirectly involved in 1 case, indirectly in 1 case while in the remaining 16 cases there was no ATM involvement.



Out of 400 SATM occurrences, there were 53 failures of communication function, 203 failures of surveillance function, 56 failures of support function, 55 failures of navigation function and 33 other SATM occurrences.



The positive aspect is that in terms of severity only one occurrence was assessed as of high severity, while others were classified in the two lowest categories of safety impact.

Just Culture

Just Culture has been implemented within CCL since 2014. The JC Policy and special JC procedures are set up in CCL. The JC concept has been disseminated to the staff and the management through the Intranet and safety promotion workshops in order to develop culture in which front line operators and others are not punished for actions, omissions or decisions they took and which are commensurate with their experience and training, while gross negligence, willful violations and destructive acts are not tolerated, as per definition laid down in the Regulation (EU) 390/2013).

International Safety Activities

As a part of its commitment to safety, CCL participates in a number of safety projects at the European level. In 2019, CCL continued its active role in a number of international initiatives and processes in the domain of safety, including the participation of its representative in Eurocontrol Safety Team and CANSO CE SAF.

Quality Management

The adoption of Quality Management System (QMS) helps CCL to improve its overall performance and it provides a solid base for sustainable development. In addition, it enhances the continuous provision of services aimed at meeting customer, organizational and regulatory requirements through continuous improvement, in addressing associated risks, opportunities and ability to show conformity to specified requirements.

CCL introduced QMS and has been re-certifying it in compliance with ISO 9001 in 2011. ISO 9001:2015 was implemented in 2018, while QMS was re-certified in line with 9001:2015. In addition, the enterprise risk management (ERM) system has been established in 2018 as a significant improvement.

The scope of activities covered by ISO 9001 certification follows the scope of service provider certificate pursuant to CIR (EU) 2017/373 and includes the provision of: ATS, CNS, AIS, MET, ASM and ATFM.

These services and functions are managed in compliance with national and international standards and requirements. The criteria for efficient management of CCL's business processes is set by the Management System Manual, whereas the services and functions are described in relevant operating manuals.

The management ensures, by means of Quality Policy, that customer requirements are identified and taken into account. Director General is responsible for the CCL's Quality Policy, which is supported by the QMS that is subject to internal and external audits as a part of ISO Certification. The quality of CCL's services is granted by integrated MS which is periodically reviewed and assessed for its long-term suitability, adequacy and effectiveness.

In 2019 CCL continued with MS upgrade introducing two major changes. The new organizational structure has entered into force and CCL has been certified for the provision of services and functions pursuant CIR (EU) 2017/373. As a part of MS, Compliance monitoring function has been established. The transition of Occupational Health and Safety Management System from BS OHSAS 18001 to ISO 45001 and the certification pursuant to ISO 45001 has been successfully performed.

Consultation with Service Users

The quality of services is being continuously improved by regular consultation with users, i.e. by taking into consideration their remarks or suggestions.

The information on user satisfaction are collected in direct communication with users by means of surveys. These surveys are published on CCL website, or are delivered by e-mail or via user forums / meetings.

After the analysis of performed consultation, the system management manager proposes the improvements of activities or service quality, and includes them as input elements in the assessment of the Company Management.

CCL plans the user consultation annually by its User consultation plan for the current year.

In 2019, the CCL services user consultation was held on the following services/functions and topics:

- ➔ ATS: Implementation of PBN SID and STAR procedures at the airports, ATS/ASM Forum 2019 - ASM, FUA, AMC portal (mobile application for airspace reservation and utilization), RPAS/UAS operations, parachuting zone procedures, ad hoc airspace structures (a survey has been conducted for the purpose of organizing the following forums).
- ➔ CNS: Coordination of exchange and operational use of CNS services, monitoring the execution of the Contract on radar data provision.
- ➔ MET: Enhancement of MET services provided to Croatia Airlines operations center, provision of MET services to airports.
- ➔ AIS: New procedures and modification of SLAs with airports and airfields, analysis of VFR publications with VFR users, web survey "Analysis of the possibility of the use of dataset".

Other consultations: Enhancement of the services provided for the needs of the Armed Forces of the Republic of Croatia, for Enlarged Committee for Route Charges, RP3 Performance Plan, SMS, risk management and Just Culture (workshop evaluation).

Environment Management System

The environmental aspects are among the most significant elements of CCL's development which are a part of organization management. The important environment management activities in 2019 were based on defined goals of the Environmental Management System in CCL.

Reduction of EM Radiation

Measuring of electromagnetic fields is performed periodically for existing EM radiation sources, as well as for newly installed equipment, pursuant to the administrative decision of the Ministry of Health. In 2019 a new cycle of periodical measurements of EM levels has begun at the existing EM sources. The measurements were performed at 4 newly installed sources.

Reduction of Noxious Gases

CCL has drafted and published the noise abatement procedures for all airports that had requested so. In 2019 there were no new requests by airport operators to draft the noise abatement procedures.

PBN SID and STAR procedures, as well as RNP approaches for Zagreb, Osijek, Dubrovnik, Split and Brač airports were developed and launched. The reduction in noxious gases can be expected as a consequence of PBN procedures implementation in 2019.

Implementing Regulation (EU) No. 2019/317 defines environment as one of the key performance areas in ANS. It defines the horizontal en route flight efficiency in actual flown trajectories (KEA) and Key Performance Indicator (KPI) in the key performance area of environment, while the Commission defined performance targets by its decision.

By its participation in SECSI FRA initiative, CCL directly contributes to lowering the KEA inefficiency and enables the service users to take the shortest paths in a wider geographical area, thus reducing the fuel consumption and consequently reduction in CO₂ and NO_x emission.

Waste Management



Waste management and generating hazardous waste is a significant aspect for CCL, which is continuously being monitored and updated.

In waste management, CCL proceeds respecting the basic principles and implementing waste hierarchy. Besides the municipal waste, CCL collects, separates and ecologically disposes of hazardous and non-hazardous waste.

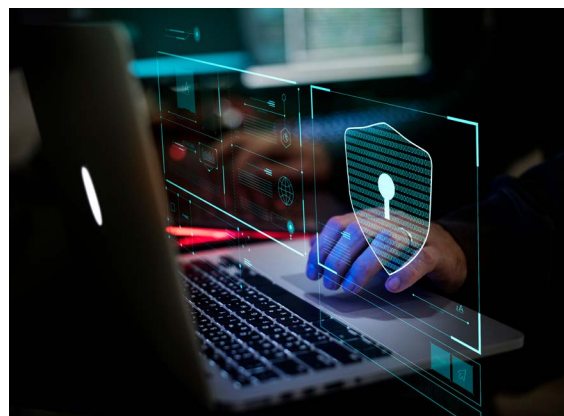
Energy Management and Investments in Renewable Sources

CCL demonstrates its care for the environment by rational use of energy products and improving the electric energy management. As of December 2017 CCL has been buying electric energy from HEP ZelEn, which is green energy coming only from renewable sources.

One of the significant changes in the power system in CCL's headquarters was the installation of the new heat pumps system connected to underground wells, which was commissioned in test mode in August 2019.

In the period August - October a new air conditioning system was used in CCL. This system is more beneficial as far as electric energy is concerned, since in summer it uses cooling heat of water from the well, which results in favorable utilization and the European seasonal energy efficiency ratio (ESEER).

Security Management



CCL contributes to maintaining the required security standards of air transport according to the pertinent regulation and the risk assessments of its assets.

In 2019 CCL made efforts to improve its security management system in all important segments which are as follows:

- ➔ protection of its staff and other persons of concern
- ➔ protection of facilities and infrastructure
- ➔ security of information systems
- ➔ auditing, inspection and testing of implemented security measures and procedures
- ➔ security awareness and education of CCL employees and other persons of concern
- ➔ security vetting.

CCL participated in Critical Infrastructure Protection As-

assessment and Improvement Project led by the European Commission and coordinated on national level by the Ministry of Interior, Department for Critical Infrastructure and Cultural Heritage.

The security plans for CCL critical assets were amended where necessary and implemented.

Security risk assessments were carried out for several crucial CCL assets.

Regarding cyber security of essential services, the CCL Cyber Network Security Committee scrutinized the requests for:

- modes of remote access to operation data systems for external industrial partners
- new data communication flow channels from insecure cyber environment toward the operational systems, granting or refusing the requests in line with the internal CCL documentation.

Exchange of warnings and other relevant data with CSIRT (Computer Security Incident Response Team) network has been maintained on regular basis.

CCL participated in a major cyber security exercise with significant resources.

Enterprise Risk Management



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CCL introduced an Enterprise Risk Management system (ERM) compliant with internationally recognized and scientifically based methodology and standards and defined the ERM Policy in 2018.

ERM is a strategic organizational tool aimed at achieving the fundamental objectives of business operation and providing long-term sustainability of an organization in all aspects of its operation.

The methodological framework for setting up and implementing the ERM system includes the analysis of the entity's environment and operations, definition of its objectives, risk identification, assessment of risks and their impact on objectives, setting up a Risk Register, risk management measures, control, communication and reporting as well as continuous process monitoring and updating.

CCL has set up the Risk Register as well as the Strategic Risks Map, and manages them actively by taking into account the identified sources and defined measures for

the mitigation of the consequences of probability and severity of particular occurrences.

Key Risk Areas in the RP3

- human resources management
- education system
- technological compliance
- safety management system
- no. of ATCOs
- project management
- efficiency of strategic and operational planning
- financial risks
- cyber threats
- reputation
- regulatory compliance
- meeting the performance targets and organizational targets
- business operations continuity

Additional Services



Aeronautical Meteorology

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CCL provides aeronautical meteorology services, with emphasis on the continuous improvement of services, staff education and regional cooperation.

In 2019 MET experts from CCL carried out competency assessment of Albcontrol's aviation meteorological personnel (forecasters and observers). Using the assessment results, they planned and carried out theoretical and practical education and on-the-job training of their forecasters. The first part was done in Tirana and on-the-job training was done at CCL's headquarters.

A seminar for MET forecasters was also held with the following main topics: measurement campaign at Dubrovnik airport, extreme weather forecasting, and verification of forecasts. As in previous years, forecasters from neighboring countries took part in the seminar.

MET experts participated in two validation exercises within SESAR 2020 program, which were a continuation of work done on the analysis of data measured with lidar wind measurements in the vicinity of Dubrovnik airport in winter 2017/2018. The obtained results are the basis for better understanding the bora winds, which can have an adverse impact on traffic and airport operations at Dubrovnik airport. After analyzing this valuable data, results were presented at International Conference on Alpine Meteorology in Italy.

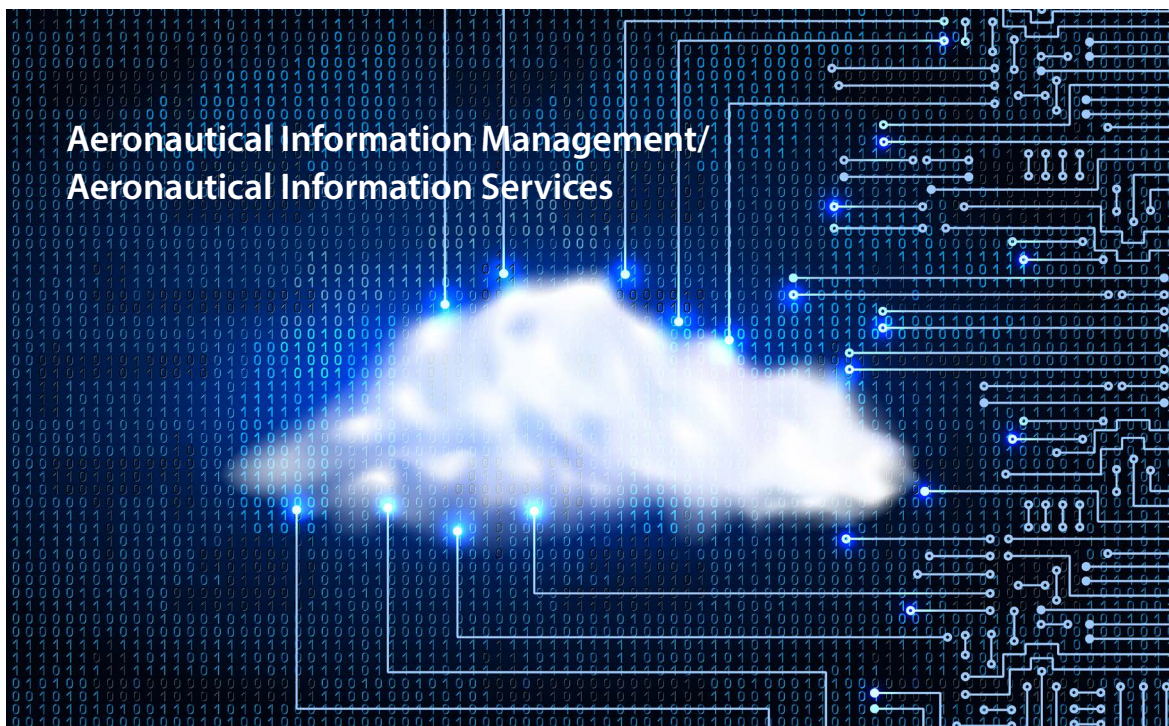
MET personnel participated in several conferences and

courses which were the opportunity to extend knowledge and skills, to become familiar with recent developments and to present our results to the others. In 2019, the forecasters attended ESSL Testbed workshop, and MET experts actively participated at conferences organized by ECMWF, ESSL, EMS, Calmet, MetMED, EUMETNET and EUMETSAT. They were active in ICAO's regional office meteorology group (METG) on the topic of TAF verification methods used in the EUR Region.

The eGAFOR project was implemented in line with the schedule. In 2019 Work Package 2 (Definition of the scope of eGAFOR) was successfully completed. All the reports of WP2 were published on www.egafor.eu. After the completion of WP2, Work packages 3 (eGAFOR system development) and 4 (Training) were launched. In other words, the future product eGAFOR was defined and the software development was launched as well as the production of the training material for forecasters.

In 2019 five locations were added to the network of web cameras for remote monitoring of Zagreb FIR, thus completing the network. Cameras are a valuable tool in weather observation and diagnosis for the forecasters, while also being used by general aviation pilots.

In the latest restructuring of CCL, a new department was created within MET Service – Department for MET Research, Development and Training.



Aeronautical Information Management/ Aeronautical Information Services

CCL provides aeronautical data and information necessary for the safety, regularity and efficiency of both international and national air navigation in Croatian airspace.

AIS Department was certified to ISO 9001 standard from 2005-2011. The current CCL certificate for all services, including the AIS, confirms the compliance with the requirements of ISO 9001.

AIM/AIS Department consists of International NOTAM Office operational 24 hours a day, and Aeronautical Publications Office.

It provides aeronautical information products - AIP AMDT/SUP, Aeronautical Charts, AIC, NOTAM as well as PIB, lists of valid NOTAMs and checklists, additional publications such as VFR Manuals and VFR Chart with recommended VFR routes.

AIM/AIS Department is rapidly preparing for the newly required provision of data sets, as per ICAO Annex 15, 16th edition and ICAO Doc 10066. All current products are available in English or as bilingual publications, except for AICs series B that are in Croatian.

Since late 2007 AIS department has fully migrated to the European Aeronautical Database (EAD), where all aeronautical information are available in electronic format via EAD SDO, INO and PAMS modules. A new EAD Agreement was signed in 2016, taking into account new regulatory requirements since the first migration.

All aeronautical information products are based on the same data source in the database (SDO), except

for charts that are currently provided from a separate source and as such incorporated in the eAIP. The electronic AIP of the Republic of Croatia is available, both in English and Croatian. AIS Department is also progressing in preparation for the transition of static data from AIXM 4.5 to AIXM 5.1 model, as well as to provide such data to the EAD SDD.

In 2019 charts were prepared by the Aeronautical Navigation, Procedure Design and Cartography Department and pre-flight briefing was provided by the ATS reporting offices (ARO) located at the aerodromes. The AROs used a local system NOTAM database for pre-flight briefing and combined it with other relevant documentation for briefing purposes.

A new local AIM database was obtained and deployed for the NOTAM and PFB purposes and it is further being adapted to allow the provision of digital aeronautical data and information.

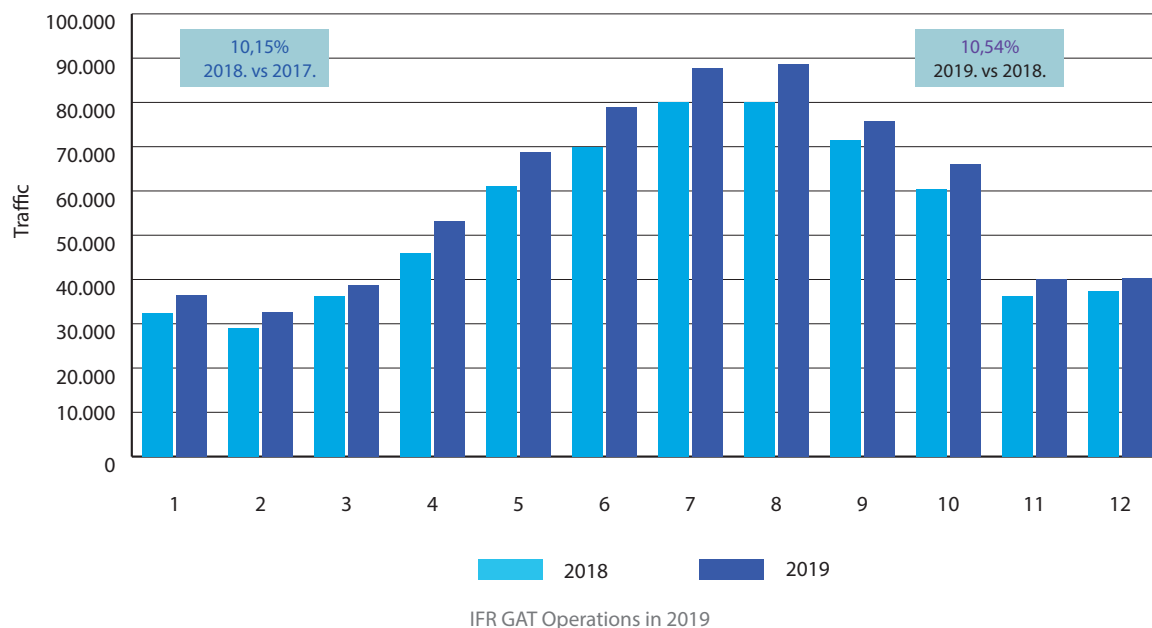
AIS has evolved in the sense of processes and integrated management systems' enhancements through the Cro-QADI project of this report: The originating data quality improvements as well as data sets exchange through the Project of modernization of the AIM Data Base are planned.

Aeronautical information is currently provided for reference purposes through the CCL/AIS web pages, while the preparation of new manners of providing the products on web pages is under way, in line with the new AIM database deployment and via the EAD web pages.

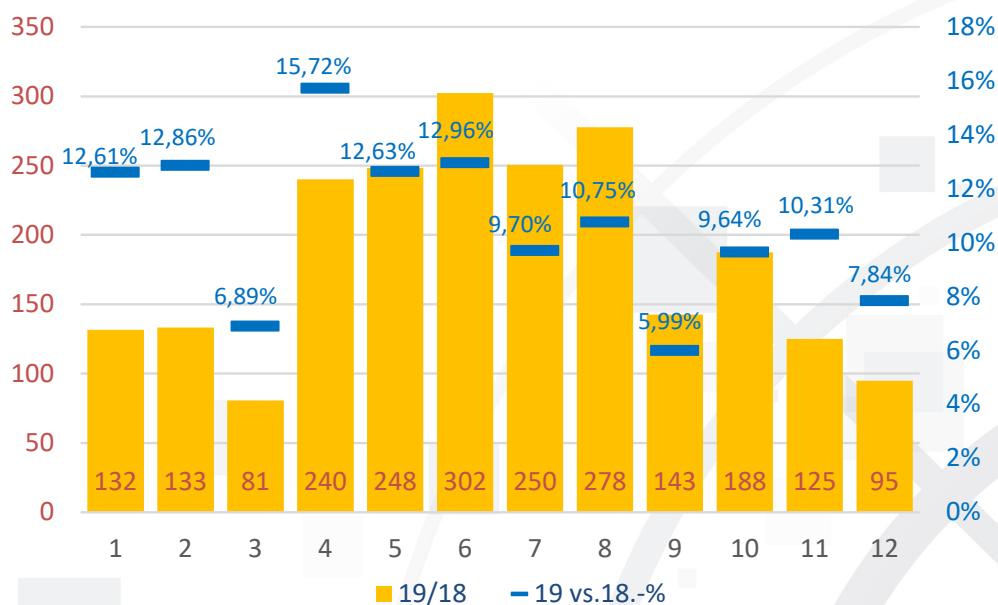
Performance

Traffic

There were more than 714 thousand IFR GAT operations in 2019 within CCL area of responsibility, which is the increase of more than 10% compared to 2018.



In the summer traffic period (from May to October), traffic increase was 10.2% higher when compared to the same period in 2018, while in the winter period the increase was 11.1%.



When the traffic growth is presented as the average daily number of flights, in the summer traffic period the daily average was 235 flights more than in the summer period of 2018.

In the winter traffic period, daily average was 134 flights more than in the same period in 2018. En route flights still make the largest share (84%) in the total number of controlled operations.

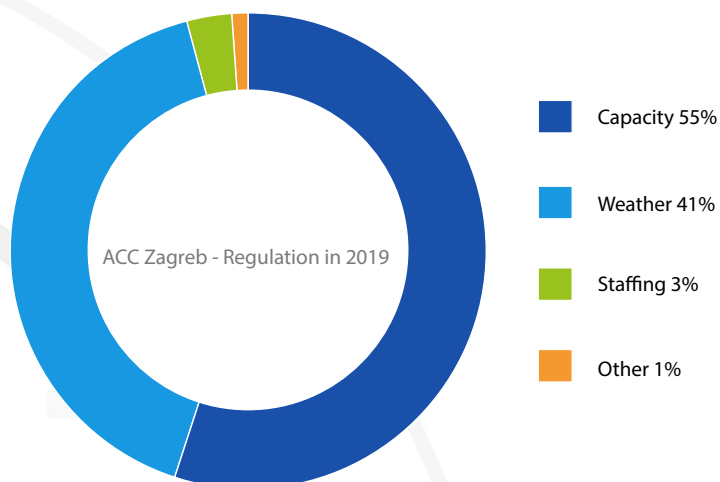
Delay

The aforementioned significant traffic growth of 10.5% more than compared to the last year, i.e. 5% more than planned (source: STATFOR – Dashboard) caused the increase in delays 2019.



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According to Eurocontrol measurements, there were 625,814 minutes of en route delay in 2019, i.e. 0.94 min/flight. The most frequent cause of delay were ATC capacity (i.e. the lack of capacity) and adverse weather conditions.



NM prepared and implemented a comprehensive plan for delay reduction for season 2019. This plan was drafted and arranged in cooperation with service providers and airspace users with the aim to redirect more than 1000 flights daily from the overloaded areas by the implementation of RAD restrictions.

Capacity

It was recognized that these measures had made an impact on CCL performance in the area of capacity, therefore in the postoperative phase of the process the NM reduced the recorded delay for CCL and some of the minutes were reallocated to German DFS and French DSNA. A total no. of 95,817 minutes was deducted from CCL, hence the total delay on FIR level at the end of the year was 540,001 minutes, i.e. 0.76 min/flight.

The en route delay plan is set up as a part of a more comprehensive capacity management plan, i.e. management of the volume of delays during the RP2, in line with the EU performance measurement program. In 2019, target value for CCL in this area was 0.19 min/flight.

Since 2019 was the last year of RP2, the target value for capacity for that year had been set in 2014 in the five-year planning process for RP2.

From the 2014 perspective, the target value for 2019 was set taking into consideration the realization of planned activities for capacity development in the five-year plan, which turned out to be inefficient due to overwhelming precarious situation caused by external factors during the long period of time.

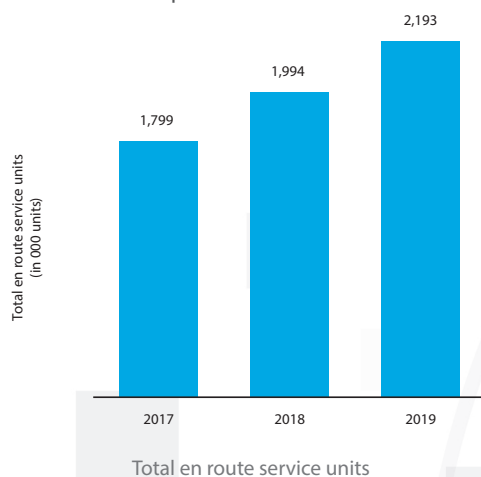
In the meantime, during RP2 there was a gap between planned and realized capacity development, which resulted in the lack of capacity, especially in 2018 and 2019 when traffic growth was strong.

Having in mind the capacity development trend which was slower than traffic demand development as well as the continuation of high traffic growth in 2019, the target value of 0.19 min/flight was unattainable in given circumstances although the basis ACC capacity increased for 7% when compared to 2018.

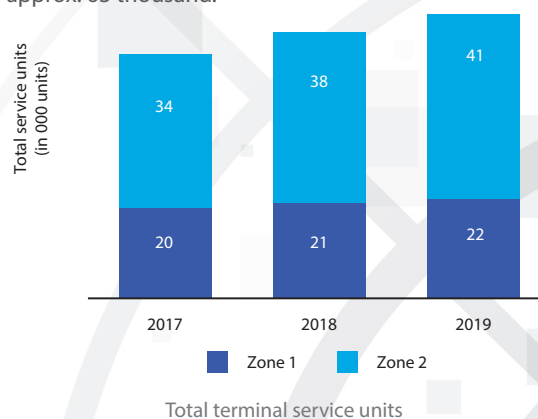
FIR	Flights	Delay	Actual average delay after post-OPS	2019 target
AT	1,364,546	1,530,113	1.12	0.19
HR	714,219	540,001	0.76	0.19
CZ	867,241	183,769	0.21	0.1
HU	891,955	1,439,948	1.61	0.05
SK	561,895	39,808	0.07	0.1
SI	459,601	1,818	0.00	0.22
FABCE	2,386,377	3,735,457	1.57	0.27

Service Units and Unit Rate

Total en route service units provided to airspace users in Croatia continued the growth trend of the previous years. In 2019 total number of 2,193 en route service units was realized, representing +10.0% in further growth compared to 2018, i.e. +13.8% growth compared to 2019 PP expectation.



As regards traffic performance recorded in Croatian terminal charging zones comprising Zone 1 (LDZA and LDZL) and Zone 2 (Other terminal ATCs), CCL continued its historical upward development in the provision of service units. In 2019 CCL managed to further increase the total number of terminal service units by +6.4% overall (combined for both terminal zones), reaching approx. 63 thousand.

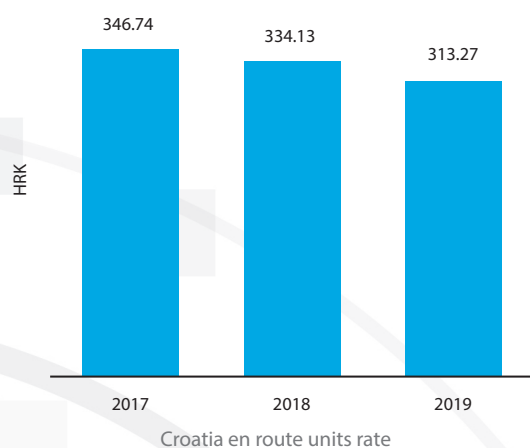


Furthermore, total budgeted en route costs for 2019, based upon the approved FAB-CE/Croatia RP2 Performance plan (PP), were initially proposed, critically reviewed and accepted by the EC and EUROCONTROL governing bodies in the amount that resulted in budgeted 2019 en route unit rate of HRK 313.27 for 2019 (exclusive of administrative unit rate). This implied -6.2% nominal decrease compared to 2018.

The identified trend in en route unit rate for 2019 was characterized by the essence of the SES performance scheme, where further -1.9% decrease in nominal en route total costs for Croatia (i.e. -2.2% for ANSP) was assumed despite the +3% expectations in traffic development (expressed in terms of service units) compared to planned 2018 levels.

As was the case in 2018, the budgeted 2019 cost development was to allow for the challenging RP2 targets in operational capacity, which were more than ever under the significant seasonal pressure and have proved to be a substantial challenge given the continuous double digit RP2 IFR GAT traffic increase compared to approved RP2 PP. Such 2019 planned cost base also had to allow for CCL's commitment to the highest level of safety standards and complexity of required procedures with full commitment on delivering RP2 CAPEX and BH ATM transition plan.

The following graph depicts the budgeted unit rates for Croatia (exclusive of administrative unit rate).



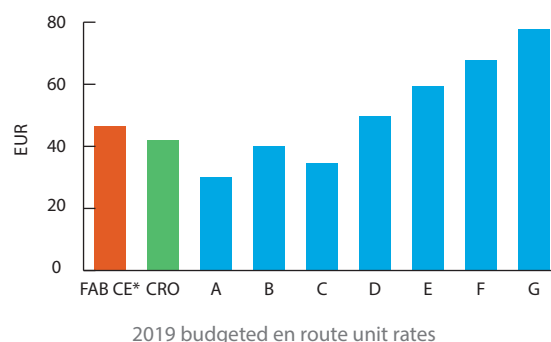
As was the case in previous periods, in 2019 CCL managed to deliver highly competitive and cost efficient performance, both regionally and FAB CE-wide. The proof of that was reflected in 7.8% (8.7% Croatia overall) better cost efficiency performance (in terms of ENR DUC) than what had been initially defined in RP2 PP for 2019, even though 2019 was characterized by intense investment activities stemming from RP2 investment plan and historical high traffic records.

2019 activities were further associated with the highly complex, multilateral and cross-border projects, the

most important of which was BHANSA taking over a responsibility for ANS provision for the portion of upper airspace within the airspace of Bosnia and Herzegovina that had previously been controlled by CCL. The operational change, commonly referred to as the BH ATM transition Phase 2, took place in December 2019. As was the case in the previous years, the fundamental prerequisite for such performance again were safety tools and processes being in place and running effectively.

As a result of such commitment and as was the case during the previous consecutive periods, Croatia managed to provide en route ANS at a competitive unit rate during 2019, most significantly supported by CCL performance.

According to finally approved en route unit rates for 2019 (CER 113), en route unit rate comparison among the Republic of Croatia and relevant neighboring countries, most of which being FAB CE partners as well, is presented on the graph below.



Note: Budgeted FAB CE en route unit rate for 2019, for the purpose of this comparison, excludes value for Croatia

Furthermore, Croatia operates two terminal charging zones with two individual terminal unit rates. Budgeted 2019 terminal unit rates were HRK 1,628.94 (-5.3% decrease compared to 2018) for terminal Zone 1 (i.e. ATC center LDZA including LDZL) and HRK 1,929.20 (the same as for 2018) for terminal Zone 2 (other ATC centers in Croatia).

Cost and Income

Actual total costs incurred during 2019 were 3.4% above the 2018 level. This resulted in 2019 actual of HRK 812.8 million (approx. EUR 109.6 million).

In addition to the previous year, CCL has further incurred significant costs related to a required additional provisions stemming from the SES regulatory framework for the net over/recoveries incurred during 2019 (hereinafter: SES provisions). These additional costs were incurred for the purpose of mitigating the financial risks which are expected to materialize in the following 2 years in the amount of HRK 105.4 million (approx. EUR 14.2 mil-



lion). Had 2019 SES provision for the regulatory risks been at the 2018 level, 2019 total costs would have been at the 2018 level as well. In other words, it implies that movement in 2019 SES provisions created on the Company's balance sheet as at December 2019 fully explains movement in 2019 total cost. Furthermore, movement in 2019 SES provisions (i.e. HRK 28.9 million) describes 84.1% of the development in 2019 business expenditures (inclusive of staff, OPEX and depreciation costs, exclusive of financial expenses). SES provisions balance represents the amount that the Company is expected to reimburse to airspace users in the following years through the mandatory unit rates' adjustments in the charging zones the SES provision relates to.

Actual total costs incurred for 2019, once adjusted for the abovementioned SES-related provisions, were marginally below the 2018 level (-0.4%) despite the consecutive and historical highest IFR GAT operations controlled during 2019. These, further and again put excessive pressure over the CCL's operational capacity, especially during 2019 when BH ATM transition project Phase 2 had been put in full operation.

The aforementioned cost development proved to be controlled given the:

- Traditionally highly seasonable air traffic demand pattern, which substantially characterizes Croatian air traffic (i.e. traffic in August was almost 2.6 times higher than February traffic), puts a significant adverse pressure on the capacity-associated costs and capacity management
- Significantly increased operational activities recorded +10.4% in IFR GAT movements (2019/2018), further supported by consecutive and significant operations development in Croatian terminals as well (+5.1% in 2019 combined for both Z1 and Z2 on top of the consecutive historical high in previous years)
- Importance and delicacy of the Phase 2 of the BH ATM transition project being put in operation at the year end
- Continuity of substantial investment activities delivered during 2019 (which recorded 148.4% of the RP2 target for 2019) was most significantly based upon the initiatives aimed at full delivery of the RP2 CAPEX plan while in the same time continuously developing efficient and effective Croatian ATM system. Overall RP2 CAPEX realization stood to be 1.0% above RP2 target, implying that CCL fully managed to close the plan-to-actual investment gap identified during the first two RP2 years, i.e. it fully delivered on RP2 investments plan previously approved by the EC
- Anticipated business risks and potential contingencies for which the adequate provisions had to be created in 2019 CCL's books (SES provisions being the most significant).

Nonetheless, CCL managed to comply with RP2 cost efficiency targets set for 2019 in line with Croatia/FAB CE RP2 PP. Moreover, recorded 2019 CCL's performance in cost efficiency KPI proved 7.8% target outperformance in en route cost efficiency, while terminal cost efficiency for a terminal Zone 1 (since the terminal Zone 2 was not

participating in the RP2 Performance scheme) recorded 5.0% target underperformance nominally.

It is worth noting that after the consecutive years of meeting the RP2 cost efficiency target (hereinafter: CEFF target) for terminal Zone 1, in the final RP2 year CEFF target has not been met only because 2019 recorded significant Zone 1 depreciation costs pressure, due to nonlinear RP2 CAPEX realization pattern. Had the 2019 Zone 1 depreciation costs been at the 2018 level, then 2019 terminal CEFF target would have been outperformed again by almost 5%, given the significant 2019 traffic development expressed in terms of service units (+12.8% above the planned level, i.e. for the whole RP2, Actual/Plan excess of almost +8% yearly on average).

As is the case with the ANS industry in general, the most significant part of CCL's total cost relates to staff costs (some 55.9% share in total costs for 2019, i.e. 64.2% after adjustment for the SES regulatory provisions), which were 2.4% above the 2018 level and 1.2% lower than CCL's annual plan for 2019. Such staff costs assured reasonable but still not fully adequate operational capacity, given the recorded development in cumulative RP2 traffic and associated ATFM delay values, as well as those provided for a full execution of RP2 investment cycle.

Financial effects stemming from the use of long term, strategic and the utmost critical investment asset – CroATMS COOPANS, significantly contributed to 2019 depreciation costs being some 8.5% above the 2018 actuals and reaching approx. 13.7% in CCL's total costs (i.e. 15.7% once total costs adjusted for element of SES provision). Even though 2019 witnessed the RP2 second most significant investment peak, full year depreciation effects are still expected to incur in the forthcoming years.

Part of CCL's business costs summarized in other (non-staff) operating expenditures (hereinafter: OPEX), which were +6.6% above the 2018 level (i.e. -8.9% below the 2018 once adjusted for the element of SES provisions), continued recording a significant contribution towards the 2019 total costs value sharing 30.1% in total costs for 2019 (i.e. shareholding of 19.7% after adjustment for SES regulatory provisions).

Additional HRK 105.4 million (approx. EUR 14.2 million) in SES regulatory related provisions has been recognized in CCL's financial statements for 2019, the development of which alone fully explains 2019 OPEX development compared to 2018.

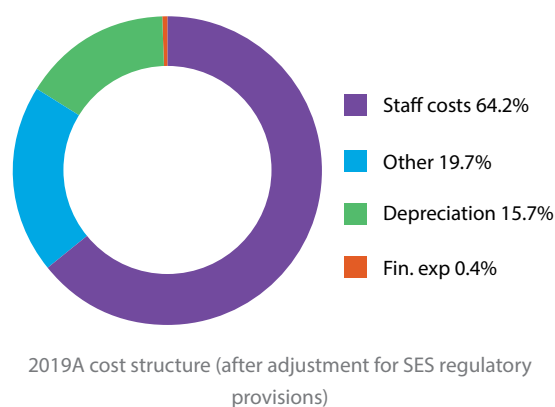
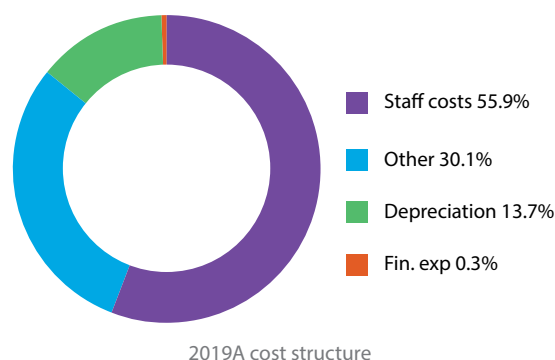
The most significant 2019 OPEX drivers that, beside the SES related provisions, have positively contributed to 2019 OPEX savings, were:

- ➔ prudent asset write-off and provision for bad debt assumptions applied over the 2018 accounts proved

to generate net favorable effects over 2019 accounts given the fact that adequate write-offs and bad debts provisions created in previous years resulted in only marginal additional asset provisions to be recognized in 2019

- ➔ cost provisions related to anticipated business risks and future commitments (expected to materialize during RP3 and further), had already been substantially provided for in previous periods, therefore resulting in net favorable OPEX saving in 2019
- ➔ significant savings realized in ATCO training costs given the challenges faced with during the public tendering process which postponed the training activities for 2020
- ➔ stable level of general utilities supported by general inflation index lower than expected.

Financial expenses accounting for approximately 0.3% of CCL's total costs decreased significantly during 2019 for the reasons existing on the side of trends recorded in unrealized FX differences.

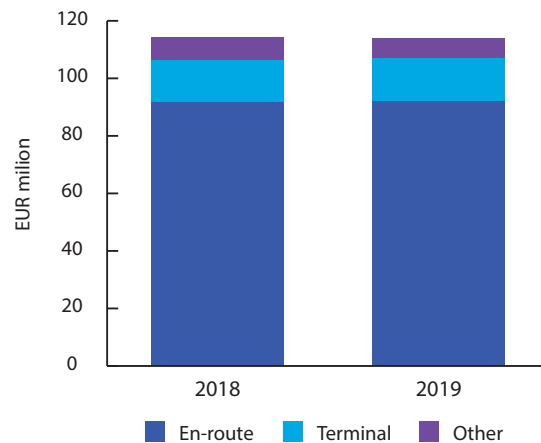


Taking into consideration that 2019 was the third consecutive year in decreasing the en route unit rate for Croatia, as well as and having in mind that 2019 recorded a significant decrease in CCL en route revenues earned for ANS provided within the BH airspace, then summer seasons that have continuously been record-breaking in terms of arrivals and overflights had not been able to sustain the 2018 level of operational revenues. Therefore, HRK 798.2 million (approx. EUR 107.6

million) in 2019 core business revenues, i.e. -1.1% compared to 2018 does not come as a surprise.

When combined with an increase in other non-core and non-sales revenues (mainly provision reversals, deferred income stemming from the EU projects' support facility etc.), CCL earned HRK 845.5 million (approx. EUR 114.0 million) in total revenues which resulted in almost the same level when compared to the previous year (-0.4%).

In the total revenue composition, en route charges were traditionally the most significant revenue source, accounting for approximately 80.6% of total revenues, followed by terminal charges accounting for 13.3%. Other non-charges and non-business revenues together with financial revenues accounted for approx. 6.2%.

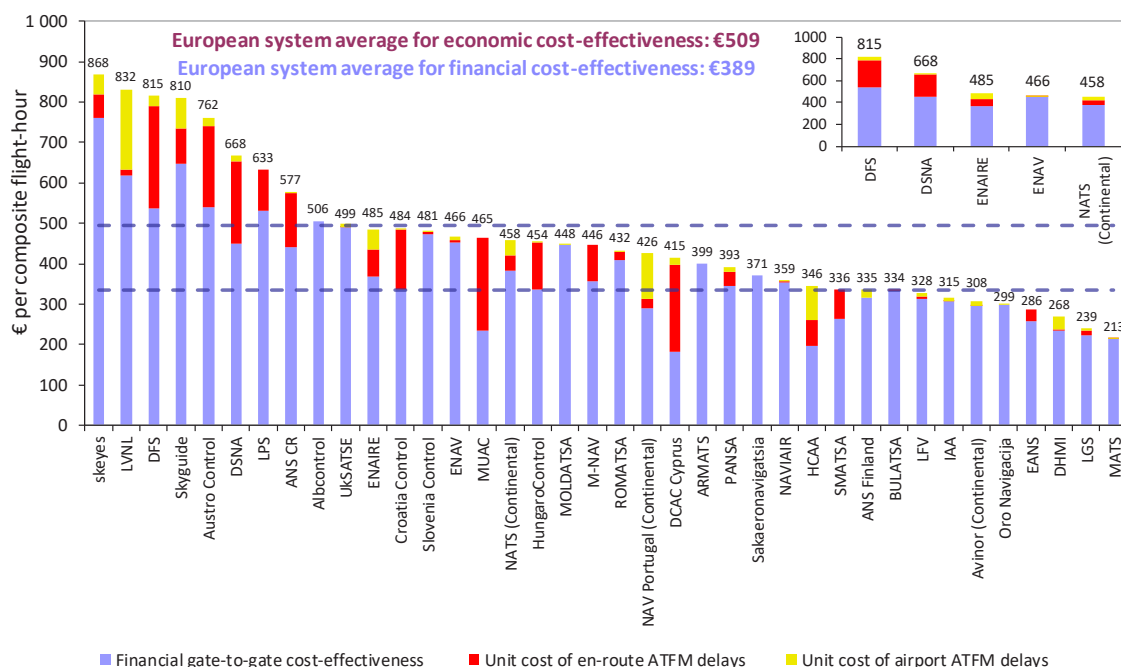


Total revenues development (@ 2019 average FX rate)

Cost Effectiveness

European ATM performance is regularly monitored by the Performance Review Unit (PRU). PRU's economic cost-effectiveness indicator gives an indication of how well an ANSP is providing the ANS in terms of cost-effectiveness. According to the final ATM Cost-Effectiveness (ACE) 2018 Benchmarking Report dated May 2020, average Pan-European system-wide gate-to-gate economic cost-effectiveness was EUR 509 per composite flight hour.

In the same period, CCL managed to perform 4.9% better than the European system average in terms of economic cost effectiveness for 2018, despite the significant traffic pressure over the 2019 en-route ATFM delay cost for 2018. Such performance positioned CCL in the central section of the ANSPs in the EUROCONTROL system in terms of economic cost effectiveness based on the highly competitive gate-to-gate financial cost-effectiveness (i.e. excluding the cost of delay) controlled way below the European average of EUR 389.



Economic gate-to-gate cost-effectiveness indicator, 2018

Cost Efficiency KPI

As regards RP2 CEFF KPI set and declared in Croatia/FAB CE PP for cost efficiency KPA, it should be noted that CCL managed to reach 7.8% better performance in terms of en route cost efficiency and 5.0% worse performance in terms of terminal Zone 1 cost efficiency KPI respectively (DUC in 2009 prices, real terms) compared to performance target set for 2019 (for a detailed 2019 Z1 DUC trend explanation please refer to "Costs and Income" section on this Annual Report).

Such performance was based on -0.1% and +9.2% movement in nominal total costs compared to 2018 for

en route and terminal Zone 1, which was further effected by +10.0% and +2.8% in 2019 en route and terminal Z1 traffic trends respectively compared to 2018.. This all materialized in mainly fulfilled CEFF performance targets for 2019 but with significant net negative risk sharing effects for CCL (reaching approx. 10% of en route and 22% of terminal Z1 DC planned for 2019) stemming from the 2019 traffic risk sharing, inflation index differences and cost sharing mechanism and which is expected to be reimbursed to users in N+2.

In terms of financial and business indicators, CCL's performance-related indicators in 2019 compared to 2018 were as follows:

Financial stability, indebtedness and liquidity indicators	2019	2018
1. Coverage of fixed assets and inventories by equity capital and long-term sources	1.68	1.71
2. Share of equity capital in the sources of funding, in %	51.57	50.81
3. Debt factor, number of years	1.9	1.9
4. Total asset turnover coefficient	0.62	0.68
5. Overall liquidity coefficient	5.35	4.94
6. Time of collection of short-term receivables, in days	58	57
7. Inventories, in days kept	1	1
Business performance indicators	2019	2018
1. Total income-expenditure ratio	1.04	1.08
2. Profit/loss share in total income, in %	3.21	6.21
3. Profit/loss share in assets, in %	1.99	4.22
4. Profit/loss share per employee, in HRK	35,984	70,364

Performance Scheme

After becoming the EU member (in July 2013), Croatia started with preparatory activities for the contribution to RP2 performance management as of 2015. For RP2, with a view to achieving sustainable development of the ATM system and improvement of overall efficiency of ANS, the EC adopted the Commission Regulation (EU) No. 390/2013 defining key performance areas (KPAs), key performance indicators (KPIs) and respective performance targets, performance indicators (PIs), as well as the performance planning and measurement processes.

The regulation mandates the development of performance plans on FAB level. This has implied CCL's participation in the development of FAB CE performance plan for RP 2 (2015-2019). Since late 2013, CCL has together with ANSPs from Austria, Czech Republic, Hungary, Slovakia and Slovenia actively participated in the development of FAB CE Performance Plan. After the iterative assessment process between FAB CE members

and the PRB (EC), the EC has adapted by Commission Implementing Decision (EU) 2016/599 that the targets included in the revised FAB CE Performance Plan submitted pursuant to Regulation (EC) No 549/2004 are consistent with the Union-wide performance targets for RP2 set out in Implementing Decision 2014/132/EU.

During 2019 CCL has participated in the performance monitoring process at the EU level by developing FAB CE Monitoring Report 2019 together with the FAB CE partners. All the CCL's performance related results achieved in 2019 are included in respective FAB CE Monitoring Report. In 2019 CCL reached all KPI target values set for the year (except enroute ATFM delay per flight), while regarding FAB CE target neither ATFM delay per flight goal nor horizontal enroute flight efficiency goals were reached.

In addition, 2019 was marked by RP 3 (2020 – 2024) Performance plan preparation including consultation with airspace users, all performed under new Performance and charging regulation (EC) 2019/317.

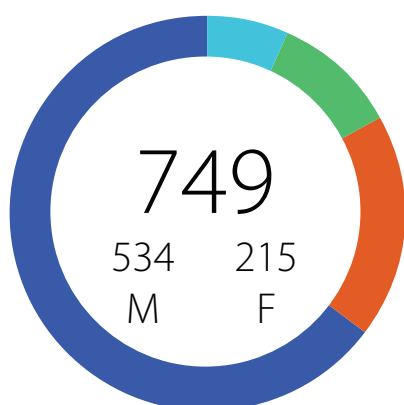
Human Resources

The Company employs the staff with adequate qualifications to enable safe, high quality and continuous provision of services. It pays special attention to human resources management, with a training system geared to ensure training, acquiring and continuous maintaining of competencies and experience, to meet international and national standards.



Employees

In 2019, the total number of employees was 749 – 534 men and 215 women. The total number of newly employed was 8, while 17 employees left the Company.



- Air Traffic Management Division 484
- CNS, MET and AIM Services Sector 138
- Corporate Functions Sector 77
- Director General's Office 50

Air traffic controllers and on-the-job trainees make a large share of the workforce. Their numbers at different operational units are shown below (status on 31 Dec 2019):

Location	ATCOs	ATCO Students
Zagreb ATCC - ACS	119	13
Zagreb ATCC - APS	23	0
Zagreb ATCC - ADI/ADV	27	1
Osijek ATCC	5	0
Pula ATCC	23	0
Split/Brač ATCC	30	0
Zadar ATCC	19	2
Dubrovnik ATCC	25	0
Rijeka ATCC	8	0
Lošinj ATCC	2	0
TOTAL	281	16

Employment and Recruiting

CCL is fully committed to pursuing the principle of equal opportunities and dignity of every individual in its recruiting and employment policy.

The employment was performed pursuant to the Labor Agreement, the Staff Rules, as well as the Organizational Structure and Job Classification Rules, which was enacted on 1 October 2019.

The selection of candidates was conducted in compliance with the predefined testing procedures, including FEAST (First European Air Traffic Controller Selection Test) program and the assessment center. The selection of ATSEP, auxiliary aviation personnel and administrative personnel was conducted according to the internal testing procedures.



Training

The training was performed in compliance with relevant EU regulations and respective training plans:

- ATCO trainees completed the ACS Unit Training and obtained the licence
- 13 ATCO trainees continued the Unit Training at the Zagreb ACC and are expected to get a licence in 2020
- 1 ATCO completed the APS Unit Training and obtained the licence
- 10 ATCO trainees completed the ADV/ADI Rating Training at ENAV, the Italian ANS. Seven of them completed the Unit Training and obtained the licence, while 3 of them are expected to complete it in the first quarter of 2020
- 4 OJT instructors completed the Controller Competency Assessor Course and acquired a relevant licence endorsement
- 12 ATCOs completed the Theoretical Training Instructor Course
- 10 OJT instructors completed the refresher course, which is a requirement for maintaining the validity of the OJT licence endorsement. The next refresher courses will be conducted by CCL as a certified training organization



- 40 participants attended the courses relating to the performance and charging scheme in RP3, the establishment of cost base and financing of ANPs (LEX-PERF and LEX-COST).

Development and refresher courses were provided either by CCL or in cooperation with the Eurocontrol Institute of Air Navigation Services (IANS) and Entry Point North (EPN).

Regular refresher courses for MET, ATSEP and other staff, domain and qualification training, and courses relating to different fields of expertise were also held in 2019.

Outlook and Priorities for 2020

In 2020, the Company is still faced with challenging and critical activities. Besides the short-term goals and priorities, the Company had planned to start activities of critical importance given the strategic orientation needed to cope with the traffic growth foreseen in RP 3. Unfortunately, due to COVID-19 pandemic CCL postponed all but necessary investments.

Goals and priorities for 2020, as set up before COVID-19, comprise the following:

Safety

- reach the goals from 'Safety area' in Performance Plan
- upgrade of ASMT tool

Capacity

- average annual ATFM enroute delay at 0.43 minutes/flight
- annual increase of baseline capacity by 7%
- new sectorization of the airspace (introduction of new Central sector)

Environment

- reduce inefficiency of the actual route to 1.49% compared to 'great circle distance'

Cost Efficiency

- realising DUC values (in EUR 2017) on enroute activities

Technical Systems

- continuous upgrade of ATM system based on harmonized COOPANS platform

Quality Management Systems

- re-certification of the Quality Management Systems according to ISO 9001:2015
- re-certification to new ATM Common Requirements Implementing Regulation (EU 2017/373)

Finance

- maintaining the financial stability indicator less than 1

Other

- improvement of AMC functionality and efficiency
- implementation of the eTOD
- development of MET tool for ATM
- continuous (initial and unit) ATCO training

CCL is closely monitoring the developments on COVID-19, new regulatory framework and RP 3 exceptional measures, and if needed, the goals and priorities will be changed accordingly.



Financial Statements and Auditor's Report

Responsibility for the Annual Financial Statements

The Management Board of the Company CROATIA CONTROL LTD, Velika Gorica, Rudolfa Fizira 2 ("the Company") is responsible for ensuring that the annual financial statements of the Company for the year 2019 are prepared in accordance with the Accounting Act (Official Gazette No. 78/15, 134/15, 120/16, 116/18, 42/20, 47/20) and the International Financial Reporting Standards as adopted by the European Union and published in the Official Journal of the European Union, to give a true and fair view of the financial position, the results of business operations, the changes in equity and the cash flows of the Company for that period.

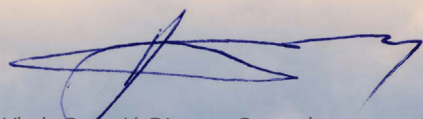
On the basis of the review, the Management Board of the Company has a reasonable expectation that the Company has adequate resources to continue in operational existence for the foreseeable future. Accordingly, the Management Board has prepared financial statements under the assumption that the Company is a going concern

In preparing these financial statements, the Management Board is responsible for:

- selecting and consistently applying suitable accounting policies in line with the effective financial reporting standards;
- giving reasonable and prudent judgments and evaluations;
- preparation of the annual financial statements on the going concern principle unless such an assumption is not further appropriate.

The Management Board is responsible for keeping proper accounting records, which shall reflect with reasonable accuracy at any time the financial position, results of operations of the Company, changes in capital and cash flow of the Company, as well as their compliance with the Accounting Act and the International Financial Reporting Standards as adopted by the European Union and published in the Official Journal of the European Union. The Management Board is also responsible for safeguarding the assets of the Company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Signed on behalf of the Management Board



Vlado Bagarić, Director General

CROATIA CONTROL LTD.

Rudolfa Fizira 2

10410 Velika Gorica

May 29, 2020



Independent Auditor's Report

To the owner of the company CROATIA CONTROL Ltd.

Report on the Audit of Annual Financial Statements

Opinion

We have audited the accompanying annual financial statements of the company CROATIA CONTROL Ltd. Velika Gorica, Rudolfa Fizira 2 ("the Company") for the year ended 31 December 2019, which comprise the Statement of Financial Position / Balance Sheet as at 31 December 2019, Statement of Comprehensive Income, Statement of Changes in Equity and the Cash Flow Statement for the year ended, and Notes to the financial statements, including a summary of significant accounting policies and other explanations.

In our opinion, the enclosed financial statements give a true and fair view, of the financial position of the Company as at 31 December 2019, its financial performance and the cash flows for the year then ended, in accordance to the Accounting Act and the International Financial Reporting Standards (IFRSs) as adopted by the European Union and published in the Official Journal of the European Union.

Basis for Opinion

We conducted our audit in accordance with the Accounting Act, Audit Act and International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Annual Financial Statements section of our report. We are independent of the Company in accordance with the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants (the "IESBA Code") and we have fulfilled our other ethical responsibilities in accordance with these requirements and the IESBA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the annual financial statements of the current period, and they include identified most significant risks of material misstatement due to error or fraud with the highest impact on our audit strategy, resources available and the time spent by the engaged audit team. These matters were addressed in the context of our audit of the annual financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters

Description

Non-current intangible and tangible assets as at 31 December 2019 amount to HRK 468,328 thousand, which represents 34.4% of the total assets. Total value of current assets was HRK 839,638 thousand (61.7% of the assets), and its largest share in the amount of HRK 582,865 thousand relates to the item Cash, which normally does not represent a complex position in the Balance Sheet. Given the material significance of non-current intangible and tangible assets, its role as the key material resource in the functioning of the Company, as well as the complexity of recording of these assets (procurement, calculation of depreciation, measurement, costs capitalization etc.), it is our opinion that these positions in the Statement of Financial Position /Balance Sheet represent the Key Audit Matters.

During 2019, the procurement of non-current assets totaled HRK 213,937 thousand and related mostly to the projects of upgrading of various IT systems, infrastructure upgrade projects and procurement of IT equipment and radio navigation equipment.

Pursuant to IAS 16, a part of the gross salary in the amount of HRK 2,030 thousand in 2019 was capitalized to the pro-

jects of the ATM system upgrade, DATA-COM projects, VOICE-COM domain projects, SUR system upgrade project.

See Notes 2.7; 16. i 18. To the Financial Statements.

How these issues were addressed in the audit

Our audit procedures included, among others, as follows:

- ➔ Assessment of the harmonization of recognition of the intangible and tangible assets with the relevant International Financial Reporting Standards
- ➔ Testing of the internal controls related to the process of procurement of tangible and intangible assets on the basis of the representative sample of procurement transactions.
- ➔ We assessed the prudence of useful life of assets used by the Company when calculating the depreciation as well as the depreciation start date for activated assets and depreciation end date for assets no longer in use.
- ➔ New procurements of tangible and intangible assets in 2019 were tested on the basis of a representative sample of procurement transactions.
- ➔ On the basis of representative transactions, we tested the disposals and write-off of tangible and intangible assets
- ➔ We examined the capitalization of own costs
- ➔ We determined that the process of arranging and registering the real estate ownership rights has not been completely settled. The settlement of these property legal issues is currently under way.

Through our audit procedures, we ascertained that the non - current tangible and intangible assets in materially significant items have been recorded and published in line with the IFRS.

Other Information in the Annual Report

The Management Board of the Company is responsible for the other information. The other information contain the information included in the Annual Report, but do not include the annual financial statements and our Independent Auditor's Report on these statements.

Our opinion on the annual financial statements does not cover the other information except inasmuch as expressly stated in a part of our Independent Auditor's Report under the title Report on other legal requirements, and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of Management Board and Those Charged with Governance for the Annual Financial Statements

Management Board is responsible for the preparation and fair presentation of the annual financial statements in accordance with IFRSs, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the annual financial statements, Management Board is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless Management Board either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Annual Financial Statements

Our objectives are to obtain reasonable assurance about whether the annual financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these annual financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the annual financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by Management Board.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our Independent auditor's report.

However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the annual financial statements, including the disclosures, and whether the annual financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Report on Other Legal Requirements

Report in view of requirements of Regulation (EU) No. 537/2014

1. On 06. June 2019 we were appointed by the Assembly of the Company on the basis of the proposal of the Supervisory board of the Company to carry out an audit of annual financial statements for 2019.
2. At the date of this report, we have been continuously engaged in carrying out the Company's statutory audits, from the audit of the Company's annual financial statements for 2017, up to the audit of the Company's financial statements for 2019, which is a total of 3 year.
3. Besides issues that our independent auditor's report identified as key audit matters within the subsection Report on the audit of annual financial statements, we have nothing to report regarding Article 10 item (c) of Regulation (EU) No. 537/2014.
4. By performing the audit of the Company's financial statements for 2019 as stipulated by law, we are able to detect irregularities, including fraud in accordance with Section 225 of the IESBA Code, Responding to Non-Compliance with Laws and Regulations, which requires us, in carrying out our audit engagement, to establish whether the Company complied with laws and regulations that are generally recognized to have a direct impact on the determination of significant amounts and their disclosures in annual financial statements, as well as other laws and regulations that do not have a direct effect on the determination of significant amounts and their disclosures in annual financial statements, but where observing them may be crucial for operational aspects of the Company's business, its ability to continue as a going concern or its avoidance of significant penalties.

Except where we encounter or become aware of disrespect of any of the aforementioned laws or regulations which

is considered insignificant according to our judgment of its content and its influence, financial or otherwise, regarding the Company, its stakeholders and the wider public, we are obliged to inform the Company thereof and seek to investigate such case, as well as take appropriate measures to resolve irregularities and prevent the occurrence of such irregularities in the future. Should the Company fail to correct irregularities regarding the position on the date of audited balance sheet arising on the basis of incorrect disclosures in audited annual financial statements that are cumulatively equal to or greater than the amount of significance for financial statements as a whole, we are required to modify our opinion in an independent auditor's report.

In the audit of the Company's annual financial statements for the year 2019, we determined the significance for financial statements as a whole in the amount of HRK 22,500,000, representing approximately 1.66% of total assets. For the purpose of the calculation of materiality the assets were taken as a criterion because the Company is responsible for rendering air navigation services to civilian and military users of the airspace of the Republic of Croatia as well as of the airspace the management of which had been delegated to the Company pursuant to international conventions and agreements. In line with the aforementioned, the primary goal of the Company is not to make profit or to increase the value for its owners, as it is the case with other economic operators operating on the market, therefore it is not the revenues that are the key category when reviewing the financial statements of the Company, but the assets which enable the Company to perform its function.

5. Our audit opinion is consistent with the additional audit report prepared for the Company's Audit Committee in accordance with provisions of Article 11 of Regulation (EU) No. 537/2014.
6. During the period between the initial date of the Company's audited annual financial statements for the year 2019 and the date of this report, we have not provided the Company with any prohibited non-audit services. In the business year before that period, we did not provide services regarding the design and implementation of internal control and risk management procedures related to the preparation and/or control of financial information or the design and implementation of technological systems for financial information. Moreover, we have maintained our independence in the performance of the audit in relation to the Company.

Report in View of Requirements of the Accounting Act

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1. In our opinion, based on activities we have carried out during the audit, the data contained in the accompanying management report of the Company for 2019 have been aligned with the accompanying annual financial statements of the Company for 2019.
2. In our opinion, based on activities we have carried out during the audit, the accompanying management report of the Company for 2019 was prepared in accordance with the Accounting Act.
3. Based on our knowledge and understanding of the Company's business and its environment gained within the scope of our audit, we have not established any significant misstatements in the accompanying management report of the Company.

Zagreb, May 29, 2020

Audit d.o.o.

Benkovićeva 2

10000 Zagreb



Darko Karić, director



Zoran Vuk, certified auditor

INCOME STATEMENT AND STATEMENT OF OTHER COMPREHENSIVE INCOME
for the year ended 31 December 2019

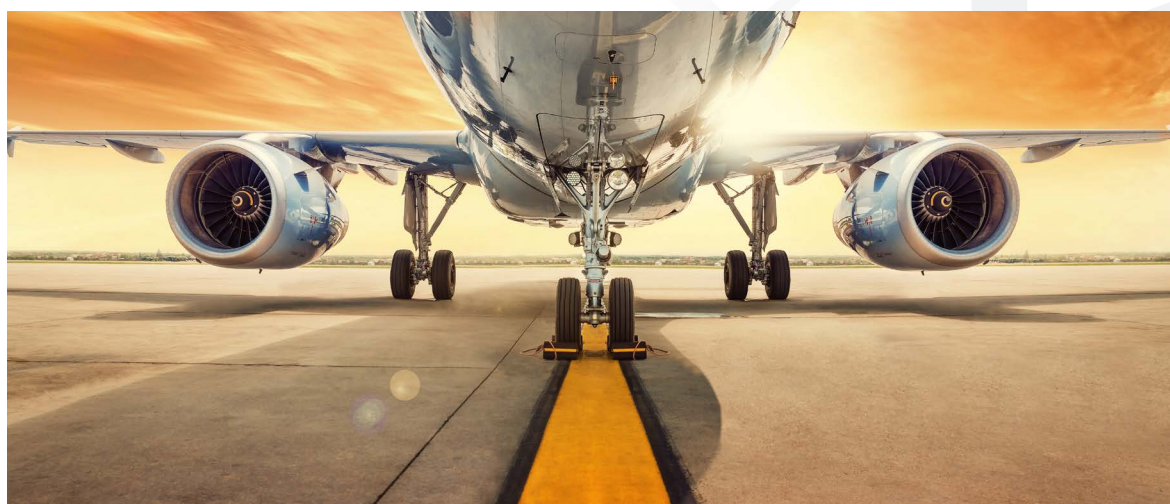
	2019	2018
	in HRK	in HRK
Sales revenue	799,337,141	808,141,822
Other operating revenues	42,021,881	36,557,707
Operating revenues	841,359,022	844,699,529
Raw material and material costs	(10,787,806)	(10,550,462)
Other external costs	(59,705,286)	(54,766,956)
Material costs	(70,493,092)	(65,317,418)
Net salaries and wages	(235,567,125)	(223,668,565)
Costs for taxes and contributions from salaries	(141,943,307)	(142,622,168)
Contributions on gross salaries	(76,928,098)	(77,711,681)
Staff costs	(454,438,530)	(444,002,414)
Depreciation	(111,141,164)	(102,446,717)
Other costs	(46,222,635)	(58,414,232)
Impairment of short-term assets	(763,402)	(471,352)
Impairment	(763,402)	(471,352)
Provisions	(123,360,589)	(97,272,991)
Other operating expenses	(3,862,388)	(7,992,536)
Operating expenses	(810,281,800)	(775,917,660)
Financial income	4,098,863	4,437,573
Financial expenses	(2,522,346)	(10,479,147)
TOTAL INCOME	845,457,885	849,137,102
TOTAL EXPENSES	(812,804,146)	(786,396,807)
PROFIT BEFORE TAXATION	32,653,739	62,740,295
Profit tax	(5,539,949)	(10,038,018)
PROFIT FOR THE PERIOD	27,113,790	52,702,277
NET OTHER COMPREHENSIVE INCOME FOR THE PERIOD	-	-
COMPREHENSIVE INCOME FOR THE PERIOD	27,113,790	52,702,277

STATEMENT OF FINANCIAL POSITION / BALANCE SHEET
at 31 December 2019

	At 31 Dec 2019	At 31 Dec 2018
	in HRK	in HRK
ASSETS		
Concessions, patents, licenses, software and other rights	122,144,778	148,039,219
Advances for intangible assets	2,819,518	12,738,033
Intangible assets in progress	34,673,119	22,816,250
Intangible assets	159,637,415	183,593,502
Right of use assets	3,045,556	0
Right of use assets	3,045,556	0
Land	48,662,749	48,662,749
Buildings	55,509,001	67,710,997
Plant and equipment	125,924,678	108,202,131
Vehicles, tools and office equipment	12,248,920	14,768,839
Advances for tangible assets	5,824,561	6,709,437
Tangible assets in progress	57,474,705	55,630,581
Tangible assets	305,644,614	301,684,734
Financial assets	119,081	118,681
Deferred tax assets	47,312,411	29,234,204
NON-CURRENT ASSETS	515,759,077	514,631,121
Raw material and inventories	2,647,916	2,182,581
Advances for inventories	0	3,316
Inventories	2,647,916	2,185,897
Accounts receivable	126,635,597	141,240,110
Receivables from employees and shareholders	293,131	458,437
Receivables from government and other institutions	7,604,705	7,281,625
Other receivables	18,753	60,319
Receivables	134,552,186	149,040,491
Loans, deposits and similar	119,573,260	941,042
Financial assets	119,573,260	941,042
Cash at bank and in hand	582,864,822	577,261,536
CURRENT ASSETS	839,638,184	729,428,966
Prepaid expenses and accrued income	6,043,266	4,821,174
TOTAL ASSETS	1,361,440,527	1,248,881,261
OFF-BALANCE SHEET ITEMS	412,910,291	405,964,923

STATEMENT OF FINANCIAL POSITION / BALANCE SHEET
at 31 December 2019 - continued

	At 31 Dec 2019	At 31 Dec 2018
	in HRK	in HRK
CAPITAL AND LIABILITIES		
Subscribed capital	450,000,000	450,000,000
Other reserves	245,920,643	193,218,366
Retained earnings	38,117,752	38,481,567
Profit for the current year	27,113,790	52,702,277
CAPITAL AND RESERVES	761,152,185	734,402,210
Provisions for pensions, severance pays and similar liabilities	80,297,378	85,236,279
Other provisions	182,542,554	77,038,169
Provisions	262,839,932	162,274,448
Liabilities to banks and other financial institutions	108,989,531	151,248,524
Lease liabilities	2,464,029	0
Deferred tax liabilities	5,642	0
Long-term liabilities	111,459,202	151,248,524
Loan liabilities and deposits	614,008	309,652
Liabilities to banks and other financial institutions	42,768,859	42,625,167
Accounts payable	46,431,536	47,181,555
Liabilities to employees	27,529,575	21,747,188
Liabilities for taxes, contributions and similar fees	27,639,545	27,091,482
Other short-term liabilities	11,910,611	8,594,626
Short-term liabilities	156,894,134	147,549,670
Accrued expenses and deferred income	69,095,074	53,406,409
TOTAL CAPITAL AND LIABILITIES	1,361,440,527	1,248,881,261
OFF-BALANCE SHEET ITEMS	412,910,291	405,964,923



STATEMENT OF CHANGES IN EQUITY
for the year ended 31 December 2019

	Share (subscribed) capital	Other reserves	Retained earnings	Profit for the current year	Total
	in HRK	in HRK	in HRK	in HRK	in HRK
At 31 December 2015	412,759,600	21,527,557	38,481,567	48,640,006	521,408,730
Share capital increase	37,240,400	(37,240,400)	-	-	-
Distribution of profit	-	48,640,006	-	(48,640,006)	-
Profit for the current year	-	-	-	68,972,956	68,972,956
At 31 December 2016	450,000,000	32,927,163	38,481,567	68,972,956	590,381,686

	Share (subscribed) capital	Other reserves	Retained earnings	Profit for the current year	Total
	in HRK	in HRK	in HRK	in HRK	in HRK
At 31 December 2016	450,000,000	32,927,163	38,481,567	68,972,956	590,381,686
Distribution of profit	-	68,972,956	-	(68,972,956)	-
Profit for the current year	-	-	-	91,318,246	91,318,246
At 31 December 2017	450,000,000	101,900,119	38,481,567	91,318,246	681,699,932

	Share (subscribed) capital	Other reserves	Retained earnings	Profit for the current year	Total
	in HRK	in HRK	in HRK	in HRK	in HRK
At 31 December 2017	450,000,000	101,900,119	38,481,567	91,318,246	681,699,933
Distribution of profit	-	91,318,246	-	(91,318,246)	-
Profit for the current year	-	-	-	52,702,277	52,702,277
At 31 December 2018	450,000,000	193,218,365	38,481,567	52,702,277	734,402,210

	Share (subscribed) capital	Other reserves	Retained earnings	Profit for the current year	Total
	in HRK	in HRK	in HRK	in HRK	in HRK
At 31 December 2018	450,000,000	193,218,365	38,481,567	52,702,277	734,402,210
First adoption of IFRS 16	-	-	(363,815)	-	(363,815)
Distribution of profit	-	52,702,277	-	(52,702,277)	0
Profit for the current year	-	-	-	27,113,790	27,113,790
At 31 December 2019	450,000,000	245,920,642	38,117,752	27,113,790	761,152,185

STATEMENT OF CASH FLOWS for the year ended 31 December 2019

		2019	2018
		in HRK	in HRK
I	CASH FLOWS FROM OPERATING ACTIVITIES		
A	Profit before tax	32,653,739	62,740,295
	Adjustments:		
	Depreciation	111,141,164	102,446,717
	(Gains)/ losses from asset disposal and non-current asset revaluation	(736,546)	312,969
	Interest and dividend income	(1,483,944)	(793,391)
	Interest expense	1,709,952	1,882,414
	Provisions	100,565,484	69,169,632
	Foreign exchange differences (unrealized)	1,802,525	774,337
	Other adjustments for non-cash transactions and unrealized (gains / losses)	(1,260,053)	(9,993,629)
B	Adjustments	211,738,582	163,799,049
C= A+B	NET CASH FLOWS BEFORE CHANGES IN WORKING CAPITAL	244,392,321	226,539,344
	(Increase)/ Decrease in short-term liabilities	7,738,713	45,660,341
	(Increase) in short-term receivables	14,811,385	(27,581,542)
	(Increase)/ Decrease in inventories	430,408	508,688
D	Changes in working capital	22,980,506	18,587,487
E	Interest expenses	(1,614,646)	(1,906,613)
F	Profit tax paid	(26,252,702)	(16,969,781)
I=Σ(A:F)	NET CASH FLOWS FROM OPERATING ACTIVITIES	239,505,479	226,250,437
II	CASH FLOWS FROM INVESTING ACTIVITIES		
	Cash inflows from sale of non-current tangible and intangible assets	213,966	162,852
	Cash inflows from interest	1,483,944	793,391
	Other cash inflows from investment activities	828,768	223,063,673
G	Total cash inflows from investing activities	2,526,678	224,019,916
	Cash outflows for purchase of non-current tangible and intangible assets	(105,847,619)	(137,822,399)
	Cash outflows for given loans and savings deposits for the period	-	(878,494)
	Other outflows from investing activities	(118,787,116)	(4,178,214)
H	Total cash outflows from investing activities	(224,634,735)	(142,879,107)
II= G+H	NET CASH FLOWS FROM INVESTING ACTIVITIES	(222,108,057)	81,140,809
III	CASH FLOWS FROM FINANCING ACTIVITIES		
	Cash inflows from the loan principals, debentures, credits and other borrowings	-	5,258,772
	Other inflows from financial activities	31,119,494	4,209,615

J	Total cash inflows from financing activities	31,119,494	9,468,387
	Cash outflows from the loan principals and bonds	(42,674,545)	(42,273,163)
	Other outflows from financial activities	(239,085)	(327,091)
K	Total cash outflows from financing activities	(42,913,630)	(42,600,254)
III= J+K	NET CASH FLOWS FROM FINANCING ACTIVITIES	(11,794,136)	(33,131,867)
I+II+III	TOTAL NET CASH FLOWS	5,603,286	274,259,379
	CASH AND CASH EQUIVALENTS AT BEGINNING OF PERIOD	577,261,536	303,002,157
	CASH AND CASH EQUIVALENTS AT END OF PERIOD	582,864,822	577,261,536
	INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS	5,603,286	274,259,379



Abbreviations

ACC	Area Control Centre
ACS	Area Control Service
ADS-B	Automatic Dependent Surveillance-Broadcast
AIC	Aeronautical Information Circular
AIP	Aeronautical Information Publication
AIS	Aeronautical Information Services
AIXM	Aeronautical Information Exchange Model
ALRS	Alerting Service
AMDT	Amendment
AMC	Airspace Management Cell
ANS	Air Navigation Services
ANSP	Air Navigation Services Provider
AoR	Area of Responsibility
APP	Approach Control Procedure
APS	Approach Control Surveillance
ARO	ATS Reporting Office
ASM	Airspace Management
ATC	Air Traffic Control
ATCC	Air Traffic Control Centre
ATCO	Air Traffic Controller
ATF	Airspace Task Force
ATFM	Air Traffic Flow Management
ATIS	Automatic Terminal Information Service
ATM	Air Traffic Management
ATS	Air Traffic Services
ATSEP	Air Traffic Safety Electronics Personnel
AWOS	Automated Weather Observing System
BVCS	Back-up Voice Telecommunications System
CALMet	Community for the Advancement of Learning in Meteorology and related disciplines
CCL	Croatia Control Ltd.
CCO/CDO	Continuous Climb Operations/Continuous Descent Operations
CDM	Collaborative Decision-Making
CEF	Connecting Europe Facility
CIR	Commission Implementing Regulation
CNS	Communication, Navigation and Surveillance
COOPANS	Cooperation between Air Navigation Service providers
CPDLC	Controller-Pilot Data Link Communications
CroATMS	Croatian Air Traffic Management System

CSIRT	Computer Security Incident Response Team
CTR	Controlled Traffic Region
CWP	Controller Working Position
DME	Distance Measuring Equipment
EAAS	European Airspace Architecture Study
EAD	European Aeronautical Information Database
EC	European Commission
ECAC	European Civil Aviation Conference
ECMWF	European Centre for Medium-Range Weather Forecasts
EMS	European Meteorological Society
EoSM	Efficiency of Safety Management
ERM	Enterprise Risk Management
ESEER	European Seasonal Energy Efficiency Ratio
ESSIP	European Single Sky Implementation
ESSL	European Severe Storms Laboratory
eTOD	Electronic Terrain and Obstacle Data
EUMETNET	Network of European Meteorological Services
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
EWG	Eurowings
EZY	easyJet
FAB	Functional Airspace Block
FAB CE	FAB Central Europe
FEAST	First European Air Traffic Controller Selection Test
FIS	Flight Information Service
FIR	Flight Information Region
FRA	Free Route Airspace
FUA	Flexible Use of Airspace
FX	Foreign Exchange
GAT	General Air Traffic
GCD	Great Circle Distance
GND	Ground
HRK	Croatian Kuna
HVAC	Heating, Ventilation, and Air Conditioning
HQ	Headquarters
IANs	Eurocontrol Institute of Air Navigation Services
IFRS	International Financial Reporting Standards
ICAO	International Civil Aviation Organization



ICT	Information And Communications Technology
IESBA	International Ethics Standards Board for Accountants
IFR	Instrument Flight Rules
ILS	Instrument Landing System
INO	International NOTAM operations
IOP	Interoperability
IPIS	Integrated IT System
ISO	International Organisation for Standardisation
JC	Just Culture
KEA	Key performance Environment indicator based on Actual trajectory
KPI	Key Performance Indicator
LDZA	Aerodrome Zagreb
LDZL	Aerodrome Lučko
LOF	Logon Forward
LSSIP	Local Single Sky Implementation
Ltd.	Limited
MAGNet	Multiservice ATM Grade Network
MET	Meteorological services
METG	ICAO Met Group for Europe and North Atlantic
MetMed	Meteorology and Climatology of the Mediterranean
MGW	Media Gateway
MSSR	Monopulse Secondary Surveillance Radar
NAN	Next Authority Notified
NAVAIDS	Navigational Aids
NDB	Non-Directional Beacon
NM	Network Manager
NOTAM	Notice to Airmen
OAT	Operational Air Traffic
OLDI	On-Line Data Interchange
OJT	On the Job Trainee
PAMS	Published Aeronautical information publication Management Service
PBN	Performance Based Navigation
PENS	Pan-European Network Service
PFB	Preflight Briefing
PI	Performance Indicator
PIB	Pre-flight Information Bulletins
PP	Performance Plan
PRU	Performance Review Unit
QMS	Quality Management System
RAD	Route Availability Document
RNAV	Area Navigation
RNP	Required Navigation Performance
RP2	Second Reference Period, 2015-2019

RPAS	Remotely Piloted Aircraft Systems
RYP	Ryanair
SAT	Satellite
SAXFRA	Slovenian Austrian Cross Border Free Route Airspace
SBC	Session Border Controllers
SCADA	Supervisory Control And Data Acquisition
SDD	Static and Dynamic Data
SDM	SESAR Deployment Manager
SDO	Static Data Operations
SEAFRA	South-East Free Route Airspace
SECSI	South-East Common Sky Initiative
SESAR	Single European Sky ATM Research
SID	Standard Instrument Departure Route
SIM	Simulator
SJU	SESAR Joint Undertaking
SMS	Safety Management System
STAR	Standard Arrival Route
STATFOR	EUROCONTROL Statistics & Forecasting Service
SUP	Supplement
SUR	Surveillance
TAF	Terminal Area Forecast
TDS	Test and Development System
TMA	Terminal Manoeuvring Area
TMCS	Technical Monitoring and Control System
TOKAI	Toolkit for ATM Occurrence Investigation
TWR	Tower Control Unit (Aerodrome Control Tower)
UAS	Unmanned Aerial Systems
UHF	Ultra High Frequency
UNL	Unlimited
UTM	Unmanned Aircraft Systems Traffic Management
VAM	Vaisala Aviation MET System
VCS	Voice Communication System
VFR	Visual Flight Rules
VHF	Very High Frequency
VoIP	Voice over Internet Protocol
VOLMET	Meteorological information for aircraft in flight
VOR	VHF Omnidirectional Radio Range
VRRS	Voice Recording and Replay System
WAM	Wide Area Multilateralism
WZZ	Wizz Air

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