Identifikacija RTF pogrešaka studenata u provedbi prilazne kontrole u simuliranim uvjetima Terminalnog prostora Frankfurt

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SVEUČILIŠTE U ZAGREBU

FAKULTET PROMETNIH ZNANOSTI

Morana Šušak

IDENTIFIKACIJA RTF POGREŠAKA STUDENATA U PROVEDBI PRILAZNE KONTROLE U SIMULIRANIM UVJETIMA TERMINALNOG PROSTORA FRANKFURT

ZAVRŠNI RAD

Zagreb, 2019.

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FAKULTET PROMETNIH ZNANOSTI
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Zadatak: **Identifikacija RTF pogrešaka studenata u provedbi prilazne kontrole u simuliranim uvjetima Terminalnog prostora Frankfurt.**

Opis zadatka:

Potrebno je objasniti važnost primjene radiotelefonske komunikacije u kontroli zračnog prometa. Objasniti primjenu radiotelefonske komunikacije za prilaznu kontrolu zračnog prometa u simuliranom zračnom prostoru TMA Frankfurt. Navesti pravila primjene radio-telefonske frazeologije. Transkribirati snimljenju, korištenu radiotelefonsku komunikaciju na BEST simulatoru za vrijeme održavanja vježbi za simulirani zračni prostor TMA Frankfurt. Analizirati vrste radiotelefonskih pogrešaka koje su studenti učinili za vrijeme održavanja vježbi. Usporediti korištenu radiotelefonsku frazeologiju i odstupanja u upotrebi od važećih propisa.

Mentor:

Ivana Francetić, prof., v. pred.

Predsjednik povjerenstva za završni ispit:

Sveučilište u Zagrebu

Fakultet prometnih znanosti

ZAVRŠNI RAD

IDENTIFIKACIJA RTF POGREŠAKA STUDENATA U PROVEDBI PRILAZNE KONTROLE U SIMULIRANIM UVJETIMA TERMINALNOG PROSTORA FRANKFURT

IDENTIFICATION OF STUDENT'S RTF ERRORS IN IMPLEMENTATION OF APPROACH CONTROL IN SIMULATED CONDITIONS OF FRANKFURT TERMINAL AREA

Mentor: Ivana Francetić, prof., v.pred.

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Zagreb, rujan 2019.

Sažetak

Radiotelefonska komunikacija između kontrolora zračnog prometa i pilota jedna je od najbitnijih čimbenika u zračnom prometu. Da bi zračni promet bio siguran i imao efikasan tok prometa, sudionici se moraju pridržavati propisanih pravila i procedura te koristiti standardnu frazeologiju.

U ovome radu obrađene su pogreške u radiotelefonskoj komunikaciji studenata Fakulteta prometnih znanosti koji su odrađivali vježbe na BEST simulatoru u simuliranom prilaznom zračnom prosturu Frankfurt, te su iste pogreške analizirane i uspoređene.

Ključne riječi: radiotelefonska komunikacija; prilazna kontrola zračnog prometa; BEST simulator; simulirani prostor TMA Frankfurt; analiza pogrešaka

Summary

Radiotelephony communication between air traffic controllers and pilots is one of the most important factors in air traffic. For air traffic to be safe and have an efficient flow of traffic, participants must adhere to the prescribed rules and procedures and use standard phraseology.

This paper deals with errors in radiotelephony communication, which were made by students of the Faculty of Transport and Traffic Sciences, who did exercises on the BEST simulator in the simulated Frankfurt approach airspace, and the same errors were analyzed and compared.

Key words: radiotelephony communication; approach air traffic control; BEST simulator; simulated area of TMA Frankfurt; error analysis

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1. Uvod

U počecima radiotelefonske komunikacije (RTF - *Radiotelepfony communication*) sporazumijevanje između kontrole zračnog prometa i pilota nije bilo obostrano. Pokušaj komuniciranja s pilotske strane nije bio moguć, već je samu komunikaciju obavljao kontrolor zračnog prometa davajući vizualne signale na zemlji koje je pilot mogao vidjeti u zraku. Razvojem i povećanjem kapaciteta zračnog prometa, radiotelefonska komunikacija morala se unaprijediti.

Najveći razvoj ustanovljen je tijekom Drugog svjetskog rata kada su se razvili radari koji su omogućavali kontroli zračnog prometa uvid u prometne situacije. Time je osiguran bolji nadzor i efikasniji način rada i komunikacije u zračnom prometu. Smanjenjem broja pogrešaka u komunikaciji poboljšava se sigurnost i efikasnost protoka zračnog prometa. Kako bi se pogreške što manje pojavljivale, svi sudionici zračnog prometa obavezni su koristiti standardnu frazeologiju i imati određenu jezičnu sposobnost korištenja engleskog jezika, koji je jezik komunikacije u radiotelefonskoj frazeologiji, tj. zrakoplovstvu.

Prilazna kontrola zračnog prometa zadužena je za kontrolu nad zrakoplovima u polijetanju i slijetanju. U ovom radu analizirane su zvučne snimke vježbi studenata odrađenih u sklopu Erasmus+ projekta „ATCOSIMA“ na simuliranom terminalnom zračnom prostoru Frankfurt na BEST simulatoru. Snimke su analizirane na način da su transkribirane transmisije troje studenata u tri vježbe te je uspoređeno koliko njihove transmisije odstupaju od standardne frazeologije. Pogreške su prebrojane i obrađene po kategorijama.

U narednim poglavljima biti će prikazano koje kategorije pogrešaka su učinili pojedini studenti. Rad je podijeljen na sljedeće cjeline:

1. Uvod

2. Važnost primjene radiotelefonske komunikacije u kontroli zračnog prometa

3. Značajke standardne frazeologije

4. Rad studenata u simuliranom terminalnom zračnom prostoru Frankfurt

5. Usporedba korištene frazeologije s važećim propisima

6. Analiza i usporedba RTF pogrešaka u simuliranim vježbama

7. Zaključak

2. Važnost primjene radiotelefonske komunikacije u kontroli zračnog prometa

U zračnom prometu radiotelefonska komunikacija koja se odvija između kontrole zračnog prometa *(ATC – Air traffic Control)* i pilota je od značajne važnosti. To je komunikacija koja se odvija na engleskom jeziku, ali se razlikuje od govornog engleskog jezika jer se sastoji od propisane standardne frazeologije koju obje strane moraju upotrebljavati. Svi sudionici moraju biti upoznati s određenim propisima i procedurama, te imati određenu razinu znanja engleskog jezika u slučaju izvanrednih situacija. Disciplina korištenja radiotelefonske komunikacije u zračnom prometu je također bitna, uz nju se podrazumijeva da sudionici zračnog prometa uvijek pažljivo slušaju na frekvenciji što ostali sudionici govore, koriste standardnu frazeologiju, da piloti ponavljaju odobrenja u skladu s propisima, da se na frekvenciji ne govori predugo te da se priča što točnije i preciznije [1]. Pilot mora javljati izvještaje o poziciji i svoje namjere na jasan i sažet način, a kontrolor mora reagirati izdavanjem odobrenja također na jasan i nedvosmislen način.

Od mnogih faktora koji su uključeni u proces komunikacije, frazeologija je bitna jer nam omogućuje brzo i učinkovito komuniciranje unatoč različitim materinjim jezicima sudionika u prometu i kao takva smanjuje mogućnost nerazumijevanja. Korištenjem standardne frazeologije smanjuje se rizik da će poruka biti pogrešno shvaćena. Pažljivim slušanjem na frekvenciji uočavaju se pogreške u govoru. Dvojeznačna ili nestandardna frazeologija česti je uzrok ili faktor doprinosa u zrakoplovnim nesrećama [2].

Da bi se zračni promet odvijao na najbolji mogući način mora se osigurati korištenje standardne frazeologije kako bi se svi sudionici u prometu mogli sporazumijeti. Svaka vrsta prometa ima svoja pravila i propise. Tako i zračni promet ima propise o korištenju standardne frazeologije između zemaljskih stanica i stanica zrakoplova. *Međunarodna organizacija civilnog zrakoplovstva (ICAO – International Civil Aviation Organisation)* propisala je standardnu frazeologiju koja omogućuje što jednostavniji i precizniji način komunikacije. Pravila o korištenju standardne frazeologije u radiotelefonskoj komunikaciji nalaze se u dokumentima *ICAO-a u Annexu 10 – Aeronautical Telecommunications, Volume II, Chapter 5 Aeronautical Mobile Service — Voice Communications*, također *ICAO Doc 9432*

Manual of Radiotelepfony te *Procedures in Air Navigation Service – Air Traffic Management (PANS-ATM Doc 4444)*.

Pri izvanrednim situacijama kada se ne primjenjuje standardna frazeologija sudionici zračnog prometa primorani su komunicirati govornim engleskim jezikom. Prema tome *ICAO Annex 1 – Personnel Licensing* propisuje ljestvicu za ocijenjivanje razine jezične sposobnosti. Postoji šest razina znanja stručnog engleskog jezika: početna, osnovna, predoperativna, operativna, stručna i napredna. Ocijenjuju se izgovor, struktura, rječnik, tečnosti izražavanja, razumijevanja te interakcija [3]. Prema ICAO Annexu 1, licencirani kontrolor zračnog prometa mora postići barem razinu četiri, to jest operativnu razinu znanja engleskog jezika da bi mogao raditi na frekvenciji [4].

3. Značajke standardne frazeologije

Pri upotrebi standardne frazeologije u radiotelefonskoj komunikaciji propisana su određena pravila kako se pojedina slova i brojke izgovaraju. U određenim situacijama potrebno je također koristiti prikladne standardne fraze. U sljedećim potpoglavljima prikazana su obilježja korištenja standardne frazeologije.

3.1. ICAO fonetička abeceda

Međunarodna organizacija civilnog zrakoplovstva (ICAO) propisala je pravila izgovora slova, riječi i brojeva. Razlog tome je da ne bi dolazilo do zabune u sporazumijevanju zbog velikih razlika u izgovoru sudionika zračnog prometa. Određena imena, kratice i riječi za koje je to propisano moraju biti slovkane. Načini izgovora slova i brojeva nalaze se u Annexu 10 Vol. II [5]. U trenutku transmisija fonetičkih riječi svako slovo se izriče zasebno. Način na koji se slova izriču prikazan je u tablici 1. Podebljani slogovi su naglašeni pri izricanju.

Tablica 1: Način izgovora radiotelefonske abecede

Slovo	Riječ	Izgovor
A	*Alpha*	**AL** FA
B	*Bravo*	**BRA** VO
C	*Charlie*	**ČAR** LI
D	*Delta*	**DEL** TA
E	*Echo*	**EK** O
F	*Foxtrot*	**FOKS** TROT
G	*Golf*	**GOLF**
H	*Hotel*	HO **TEL**
I	*India*	**IN** DIJA
J	*Juliett*	**DŽU** LI JET
K	*Kilo*	**KI** LO
L	*Lima*	**LI** MA
M	*Mike*	**MAJK**
N	*November*	NO **VEM** BE
O	*Oscar*	**OS** KA
P	*Papa*	PA **PA**
Q	*Quebec*	**KVI** BEK
R	*Romeo*	**RO** MIO
S	*Sierra*	**SIJE** RA
T	*Tango*	**TEN** GO
U	*Uniform*	**JUNI** FOM

V	*Victor*	**VIK** TOR
W	*Whiskey*	**VIS** KI
X	*X-ray*	**EKS** REJ
Y	*Yankee*	**JEN** KI
Z	*Zulu*	**ZULU**

Izvor: [6]

3.2. Prijenos brojeva

U prijenosu pozivnog znaka zrakoplova, smjera leta, uzletno-sletne staze, smjera i brzine vjetra, svi brojevi koji se upotrebljavaju, moraju se prenositi izgovaranjem svake znamenke zasebno [7]:

- „Razine leta moraju se prenositi izgovaranjem svake znamenke zasebno, osim u slučaju razina leta u cijelim stoticama“
- „Brojevi s decimalnom točkom moraju se prenositi kako je propisano, pri čemu se decimalna točka u odgovarajućem slijedu naznači riječju „DECIMAL“ (točka)“
- „Za identifikaciju kanala prijenosa u radiotelefonskim komunikacijama u visokofrekvencijskom pojasu *(VHF-Very high frequency)* moraju se upotrebljavati svih šest znamenki brojčane oznake, osim ako su peta i šesta znamenka nule, tada se upotrebljavaju samo prve četiri znamenke“

U slučaju korištenja komunikacije na engleskom jeziku, izgovor broja biti će izrečen kako je prikazano u tablici 2.

Tablica 2: Način izgovora brojeva

Broj	**Izgovor**
0	ZE-RO
1	WUN
2	TOO
3	TREE
4	FOW-ER
5	FIFE
6	SIX
7	SEV-EN
8	AIT
9	NIN-ER

Hundred	HUN-DRED
Thousand	THOU-SAND
.	POINT
,	DAY-SI-MAL

Izvor: [6]

3.3. Standardne riječi i fraze

Kako bi RTF komunikacija bila što jasnija, olakšana i efikasnija za korištenje sudionicima zračnog prometa, propisane su standardne riječi i fraze. U tablici 3 je prikazane su fraze i njihovo značenje.

Tablica 3: Standardne riječi i njihovo značenje

Standardna fraza	**Značenje**
ACKNOWLEDGE	*Let me know that you received and understood this message.*
ADVISE	*Tell us/Inform us on/of/about...*
AFFIRM	*Yes.*
AIRBORNE	*The time the flight has started after the take-off phase.*
APPROVED	*Permission for proposed action granted.*
BREAK	*I hereby indicate the separation between portions of the message. (To be used where there is no clear distinction between the text and other portions of the message.)*
BREAK BREAK	*I hereby indicate the separation between messages transmitted to different addressees in a very busy environment.*
CANCEL	*Annul the previously transmitted clearance.*
CAUTION	*Beware of the following conditions or situations.*
CHECK	*Examine a system or procedure. (No answer is normally expected.)*
CLEARED	*Authorized to proceed under the conditions specified.*
CLIMB	*Climb to maintain (to level out).*
COMPLY	*Act in compliance with a request or instruction.*
CONFIRM	*I request verification of: (clearance, instruction, action, information).*
CONTACT	*Establish communications with ...*
CORRECT	*True or accurate.*

CORRECTION	*An error has been made in this transmission (or message indicated). The correct version is...*
CROSS	*Fly/taxi across. Pass from one side to the other side of...*
DEPART	*Leave.*
DEPARTURE	*Take-off, departing.*
DESCEND	*Descend to maintain (to level out).*
DISREGARD	*Ignore.*
ESTIMATE	*Calculate/make approximate calculation.*
EXPEDITE	*Speed up, increase speed/rate.*
HOLD	*Keep in place or condition.*
HOLD SHORT	*Keep at a distance/keep away of/ stop before reaching the specified location…*
HOW DO YOU READ	*What is the readability of my transmission?*
IMMEDIATEL(LY)	*At once, without delay due immanent risk/hazard*
I SAY AGAIN	*I repeat for clarity or emphasis.*
LEAVE	*Depart, abandon, go away from.*
LOOK OUT (FOR)	*View over, survey inspection (watch out for immanent risk/hazard.)*
MAINTAIN	*Continue in accordance with the condition(s) specified or in its literal sense, e.g. Maintain VFR.*
MONITOR	*Listen out on (frequency).*
NEGATIVE	*No/Permission not granted/That is not correct/Not capable.*
OUT	*This exchange of transmission is ended and no response is expected. (Not normally used in VHF communications)*
OVER	*My transmission is ended and I expect a response from you. (Not normally used in VHF communications)*
READ	*Hear and understand*
READ BACK	*Repeat all, or the specified part of this message back to me exactly as received.*
RECLEARED	*A change has been made to your last clearance and this new clearance supersedes your previous clearance or part thereof.*

REPORT	*Pass me the following information...*
REQUEST	*I should like to know/I wish to obtain...*
REVISION	*Reconsidered or corrected version/calculation of time.*
ROGER	*I have received all of your last transmission.*
SAY AGAIN	*Repeat all, or the following part of your last transmission.*
SLOW DOWN	*Reduce your speed.*
SPEAK SLOWER	*Reduce your rate of speech.*
SQUAWK	*Set the mode/code as instructed.*
STANDBY	*Wait and I will call you.*
UNABLE	*I cannot comply with your request, instruction or clearance. (normally followed by a reason)*
VERIFY	*Check and confirm with originator.*
WILCO	*I understand your message and will comply with it.*
WORDS TWICE	*a) As a request: Communication is difficult. Please send every word, or group of words, twice.* *b) As information: Since communication is difficult, every word, or group of words, in this message will be sent twice.*

Izvor: [8]

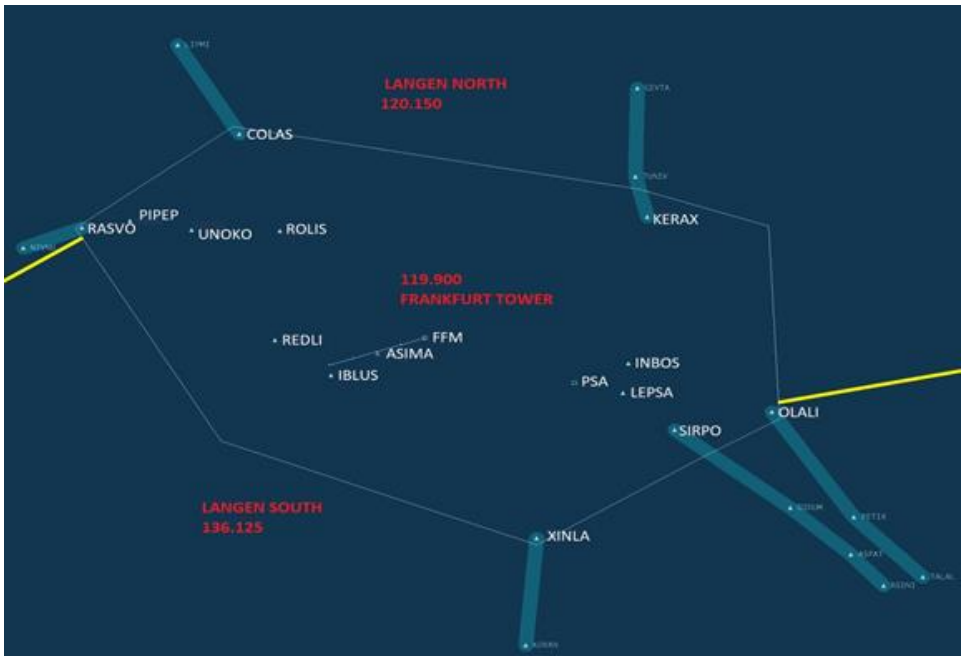
4. Rad studenata u simuliranom terminalnom zračnom prostoru Frankfurt

U ovome poglavlju opisan je simulator na kojemu su studenti odrađivali vježbe te kako je izgledao zračni prostoru u kojem se odvijao promet kojeg su kontrolirali. Snimke vježbi korištenih u ovom radu snimljene su u periodu od 20.2. do 26.03.2018. Pri izvođenju vježbi studenti su naučili raditi na novom zračnom prostoru, kontrolirati zračni promet s velikim brojem dolazećih aviona i raditi sa stripovima. Studentima su dodijeljeni detalji o zračnom prostoru i vježbama, točke, frekvencije, slike zračnog prostora, vektori i RTF upute.

4.1. Značajke BEST simulatora

BEST – Beginning to End for Simulation and Training je naziv simulatora koji je korišten za vrijeme snimanja vježbi koje su analizirane u ovome radu. BEST simulator se koristi u osnovnom osposobljavanju kontrolora zračnog prometa na Fakultetu prometnih znanosti te se na njemu vrše simulacije prometa i vježbe koje nadziru instruktori [9]. Sve tri vrste kontrole zračnog prometa (aerodromska, prilazna i oblasna) se provode na ovome simulatoru. Na BEST simulatoru studenti trebaju upotrebljavati standardnu frazeologiju i koristiti propisane procedure. Fleksibilnost simulatora omogućava korisniku izradbu vježbi od manje zahtjevnog prometa do prometa veće gustoće i kompleksnosti.

Simulator na kojem su se vježbe odrađivale ima dvije kontrolorske pozicije te dvije pseudo-pilotske pozicije. Na kontrolorskoj poziciji nalaze se tri različite vrste monitora. Na glavnom monitoru nalazi se radarski prikaz prometne situacije koji je vidljiv na slici 1.



Slika 1: Radarski prikaz zračnog prostora na BEST-u

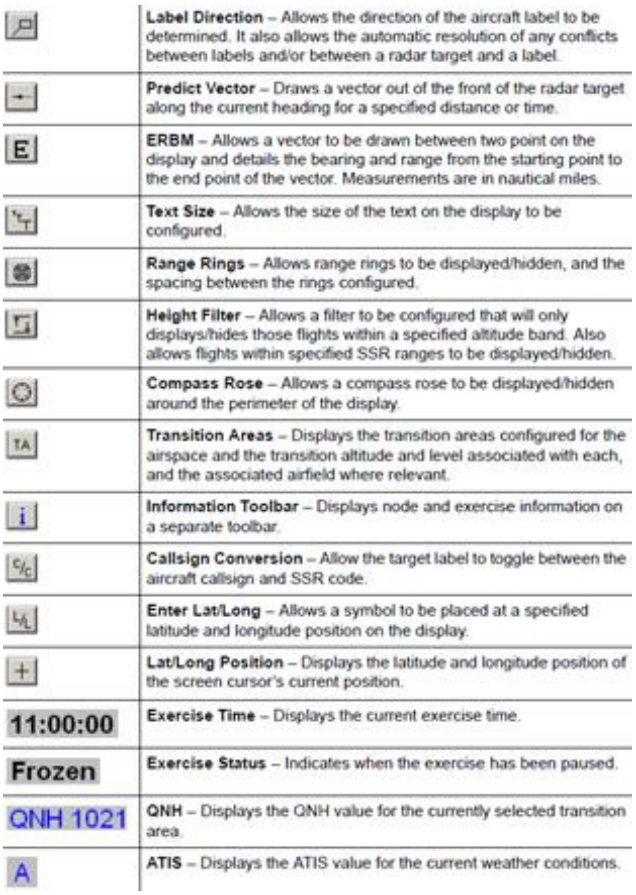
Izvor: [10]

Na istom monitoru uz gornji rub ekrana nalazi se traka s pomoćnim alatima. Uz traku na ekranu se nalaze postavke zumiranja ekrana, namještanje veličine teksta, vrijeme, boja zrakoplova, kompasna ruža, naziv vježbe i ostali pomoćni alati prikazani na slici 2 i slici 3.

Tool	Description
	Recentre – Realigns the display so the airspace reference point is in the middle of the display. See *Restoring the Display Centre* on page 22 for further details.
	Reset – Reverts to the range, display position and displayed map layers that were presented when the exercise was started. See *Restoring the Original Display Settings* on page 22 for further details.
	Zoom – Allows a portion of the display to be selected which is expanded to fill the display. See *Zooming In* on page 22 for further details.
	Switch – Toggles between the selected zoomed-in view and the view from which the zoom area was selected.
	Map – Allows the various map layers that are present in the airspace to be displayed or hidden. It also provides access to drawing tools that can be used to draw a number of geometric shapes on the display, as well as a text tool. Right-clicking on this tool allows the colour of a number of the map elements to be altered.
	Traffic Highlight – Allows particular aircraft to be filtered out of the display. It also allows all flights on the same frequency as the display position to be highlighted. In addition, it can display a selected flight's route between fixes and can also display the ETAs for the flight at each fix.
	Trail Length – Allows the length of the trail history behind a radar target to be determined.

Slika 2: Prikaz pomoćnih alata na BEST-u, prvi dio

Izvor: [9]

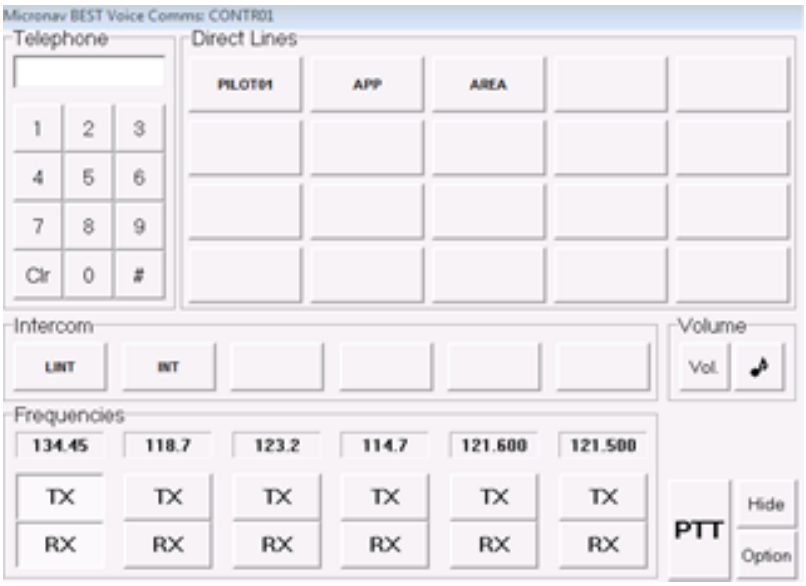


	Label Direction – Allows the direction of the aircraft label to be determined. It also allows the automatic resolution of any conflicts between labels and/or between a radar target and a label.
	Predict Vector – Draws a vector out of the front of the radar target along the current heading for a specified distance or time.
E	**ERBM** – Allows a vector to be drawn between two point on the display and details the bearing and range from the starting point to the end point of the vector. Measurements are in nautical miles.
	Text Size – Allows the size of the text on the display to be configured.
	Range Rings – Allows range rings to be displayed/hidden, and the spacing between the rings configured.
	Height Filter – Allows a filter to be configured that will only displays/hides those flights within a specified altitude band. Also allows flights within specified SSR ranges to be displayed/hidden.
	Compass Rose – Allows a compass rose to be displayed/hidden around the perimeter of the display.
TA	**Transition Areas** – Displays the transition areas configured for the airspace and the transition altitude and level associated with each, and the associated airfield where relevant.
i	**Information Toolbar** – Displays node and exercise information on a separate toolbar.
	Callsign Conversion – Allow the target label to toggle between the aircraft callsign and SSR code.
	Enter Lat/Long – Allows a symbol to be placed at a specified latitude and longitude position on the display.
	Lat/Long Position – Displays the latitude and longitude position of the screen cursor's current position.
11:00:00	**Exercise Time** – Displays the current exercise time.
Frozen	**Exercise Status** – Indicates when the exercise has been paused.
QNH 1021	**QNH** – Displays the QNH value for the currently selected transition area.
A	**ATIS** – Displays the ATIS value for the current weather conditions.

Slika 3: Prikaz pomoćnih alata na BEST-u, drugi dio

Izvor: [9]

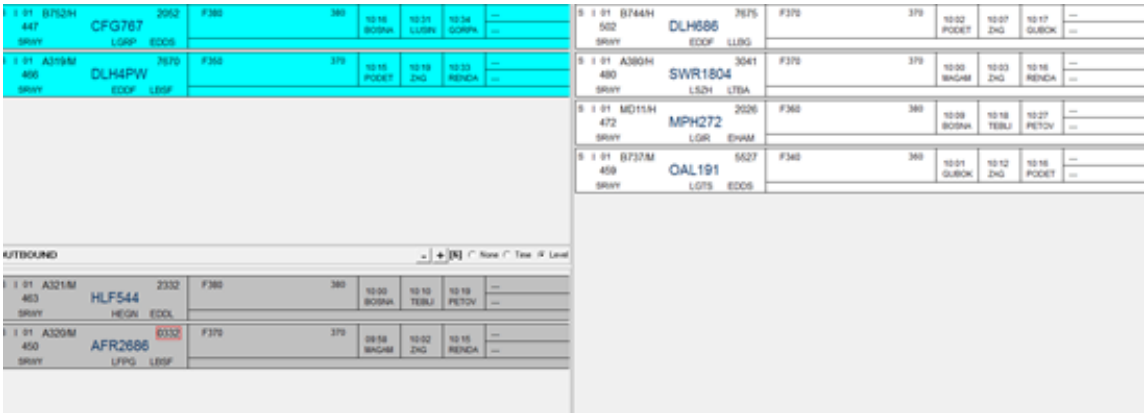
Na drugom monitoru, prikazanom na slici 4, smještene su frekvencije obližnjih stanica za međusobnu komunikaciju i dogovore. Dodirom prsta na određenu frekvenciju uspostavlja se kontakt s obližnjom stanicom.



Slika 4: Slika monitora s frekvencijama na BEST-u

Izvor: [9]

Na trećem monitoru nalaze se elektronički stripovi s podacima o dolazećem i odlazećem prometu, podaci o zrakoplovu kao što su: pozivni znak zrakoplova, tip zrakoplova, podaci o rutama leta, navedene točke i okvirno vrijeme dolaska na određenu točku, aerodromi odlaska i dolaska i visine leta. Svi navedeni podaci mogu se vidjeti na slici 5.



Slika 5: Slika monitora s elektroničkim stripovima na BEST-u

Izvor: [9]

4.2. Simulirani terminalni zračni prostor Frankfurt

Studenti su dobili zadatak odrađivati vježbe na simuliranom terminalnom zračnom prostoru *(TMA – Terminal area)* Frankfurta klase C, što znači da je dopušteno letenje prema pravilima intrumentalnog letenja (*IFR-Instrument Flight Rules*) i prema pravilima vizualnog letenja (*VFR – Visual Flight Rules*). U tom prostoru razdvajaju se IFR od IFR prometa, IFR od VFR prometa i obrnuto, a VFR prometu pružaju se dodatne informacije o drugom VFR prometu. U ovim vježbama svi zrakoplovi su bili vrste IFR prometa. Uzletno sletna staza u upotrebi je bila staza 07, jer je njen smjer u odnosu na magnetski sjever iznosio 070°.

Ulazne točke sa sjevera i sjeverozapada bile su COLAS (NIVNU) i RASVO, dok su sa sjeveroistoka, istoka i juga točke KERAX (TIVNU), OLALI, SIRPO i XINLA. Svi zrakoplovi pri ulasku su trebali biti na razini leta višoj od 20 000 stopa.

Izlazna točka na sjeveru bila je RASVO, dok su na istoku i jugu bile točke OLALI, SIRPO i XINLA. Zrakoplovi na izlaznim točkama trebali su biti na razini leta višoj od 20 000 stopa.

Svakoj ulaznoj točki instruktori su dodijelili najprikladnije smjerove leta koje je bilo najbolje iskoristiti pri početnom javljanju zrakoplova. Sve ulazne točke sa pripadajućim smjerovima leta prikazane su u tablici 4.

Tablica 4: Ulazne točke u simuliranom zračnom prostoru Frankfurt i predloženi smjerovi leta pri ulasku

TOČKA	SMJER LETA
COLAS	150
RASVO	115
KERAX	245
OLALI	275
SIRPO	280
XINLA	315

Izvor: [10]

Primjer jednog smjera leta pri ulasku na točku XINLA prikazan je na slici 6. Ako zrakoplovi nisu dobili vektorske instrukcije, tada su letjeli po planu leta koji ih je vodio do točaka REDLI ili IBLUS te bi na kraju dobivali završne vektore. Završni vektori koji su se zadavali su smjera 100 (+/- 10°) sa sjevera i smjera 040 (+/- 10°) sa juga.

Slika 6: Prikaz radarske slike sa predloženim smjerom leta pri ulasku na točku XINLA

Izvor: [10]

4.3. Primjerna standardne frazeologije prilazne kontrole u simuliranom terminalnom zračnom prostoru Frankfurt

Primjeri navedeni u ovome potpoglavlju prikazuju komunikaciju između studenata na simulatoru. Prije samih vježbi studenti su bili upoznati sa prikladnom RT frazeologijom koju su trebali koristiti.

Radiotelefonska komunikacija odvija se isključivo na engleskome jeziku kada se leti prema pravilima instrumentalnog letenja (IFR). U narednim primjerima navedena je frazeologija za IFR promet koja se koristila pri simuliranim vježbama terminalnog zračnog prostora Frankfurt. U vježbama se nije koristila frazeologija koja uključuje standardne instrumentalne dolaske *(STAR - Standard (instrument) arrival)* i standardne instrumentalne odlaske *(SID – Standard instrument departure)*. Pri korištenju standardne frazeologije odobrenja koje kontrolor zračnog prometa daje, pilot mora ponoviti. Vrste instrukcija koje podliježu ponavljanju odobrenja (eng. *readback)* su: odobrenje rute, podešavanje

visinomjera, odobrena visina, odobrena brzina, smjer leta, uzletno-sletna staza, vektoriranje za prilaz uzletno-sletnoj stazi.

4.3.1. Zrakoplovi u dolasku

Početni poziv je poziv koji označava uspostavu komunikacije i kojim se prvi put javlja stanica zrakoplova, a stanica jedinice kontrole zračnog prometa odgovara.

U preslušanim vježbama, pri početnom javljanju pilot zove nadležnu prilaznu jedinicu kontrole zračnog prometa, pritom se predstavlja sa svojim zrakoplovnim pozivnim znakom, javlja točku kojoj prilazi i visinu na kojoj se nalazi. Nakon javljanja zrakoplova, kontrola zračnog prometa odgovara sa pozivnim znakom zrakoplova, predstavlja sebe, daje do znanja zrakoplovu da je identificiran, i daje instrukcije.

Postoji više načina davanja instrukcija pri ulasku u zračni prostor koji su navedeni u danim primjerima. Kako bi se utvrdilo da je pilot ponovio sve što podliježe ponavljanju odobrenja kontrola zračnog prometa odgovara sa frazom „correct“. U suprotnome mora ispraviti pogrešku koju je pilot krivo ponovio. U primjeru 1., prikazana je frazeologija pri ulasku u zračni prostor započeta vektoriranjem zrakoplova, dok je u primjeru 2. prikazana frazeologija kada je zrakoplov u blizini točke RASVO i kada je moguće ostaviti zrakoplov da leti po određenoj ruti te ga se naknadno vektorirati (P-oznaka za pseudo-pilota; C-oznaka za studenta-kontrolora).

Primjer 1.:

P: Langen Radar, Lufthansa 424, inbound XINLA, maintaining flight level 220

C: Lufthansa 424, Langen Radar, identified, leave XINLA/fly heading 315, descend to 5 thousand feet, QNH 1013, vectoring for ILS approach runway 07

P: To leave XINLA/Flying heading 315, descending to 5 thousand feet, QNH 1013, vectoring for ILS approach runway 07, Lufthansa 424

C: Lufthansa 424, correct

Primjer 2.:

P: Langen Radar, Turkish 163, inbound RASVO, maintaining flight level 210

C: Turkish 163, Langen Radar, identified, descend to flight level 90, expect ILS approach runway 07

Nakon uspostavljanja prvog kontakta zrakoplov se naknadno spušta ili vektorira. Kako bi se zrakoplovi vektorirali u zamišljene školske krugove u blizini aerodroma sa sjeverne i sjeverozapadne strane dodavali su im se vektori u smjeru 160 +/- 10°, a sa južne i jugoistočne strane smjera 340 +/- 10°. *QNH (kratica za izražavanje visine leta s obzirom na tlak srednje razine mora)* i razlog zašto se zrakoplov vektorira, govori se sada ako već prije nije spomenut.

Primjer 3.:

C: Cargolux 133, turn right heading 330, descend to 4 thousand feet (QNH 1013)

P: Turning right heading 330, descending to 4 thousad feet, (QNH 1013), Cargolux 133

C: Cargolux 133, correct

4.3.2. Završni prilazni vektori

U prilaznoj kontroli zračnog prometa najvažnije je održavati propisanu separacijsku normu te pri tome zadržati redovit i efikasan protok prometa. Da bi se to održalo, kontrola zračnog prometa uvijek mora paziti kada točno dati instrukciju zrakoplovu za završne vektore i osigurati da je zrakoplov na određenom mjestu dosegao određenu visinu.

Zrakoplovima koji dolaze sa sjevera i sjeverozapada dodijeljuje se završni prilazni vektor smjera 100 +/- 10°, a zrakoplovima koji dolaze sa juga i jugoistoka dodijeljuje se završni vektor smjera 040 +/- 10°. Također, ako nisu prije spušteni na 3 000 stopa, ta instrukcija im mora biti izrečena. Pri davanju završnih vektora kontrola zračnog prometa daje do znanja pilotu da odgovori kada je uspostavio kontakt s uređajima za pomoć pri slijetanju.

Primjer 4.:

C: *Cargolux 133, turn left heading 100, descend to 3 thousand feet, cleared for ILS approach runway 07, report ILS established*

P: Turning left heading 100, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Cargolux 133

C: Cargolux 133, correct

Nakon što pilot odgovori, jedinica prilazne kontrole proslijeđuje svoju nadležnost aerodromskoj kontroli zračnog prometa. Pri vježbama frekvencija jedinice Frankfurt Tower bila je 119,9.

Primjer 5.:

P: Cargolux 133, ILS established

C: Cargolux 133, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, Cargolux 133

C: Cargolux 133, correct

4.3.3. Zrakoplovi u odlasku

Pilot zrakoplova u odlasku zove nadležnu prilaznu kontrolu zračnog prometa, govori pozivni znak zrakoplova, i javlja da je poletio. Kontrola zračnog prometa na to odgovara i identificira zrakoplov, te daje daljnje instrukcije koje uključuju skretanje, ili ako zrakoplov nastavlja letjeti po smjeru staze, također daje instrukciju na koju visinu zrakoplov smije penjati. Naravno nakon ponovljene instrukcije koju je pilot izgovorio, kontrolor zračnog prometa treba potvrditi točnost ponovljene instrukcije frazom „correct“.

Primjer 6.:

P: Langen Radar, KLM 662, airborne

C: KLM 662, Langen Radar, identified, on runway heading climb to flight level 250, ili

C: KLM 662, Langen Radar, identified, turn right direct to XINLA, climb to flight level 250

Kada je zrakoplov već blizu izlaska iz nadležnosti prilazne kontrole zračnog prostora, kontrolor zračnog prometa ga prebacuje na sljedeću frekvenciju, to jest sljedećoj nadležnoj

jedinici oblasne kontrole zračnog prometa. U ovoj simulaciji, frekvencije koje su se koristile za jedinicu kontrole zračnog prometa Langen Radar su: *South* sektor 136,125 i *North* sektor 120,150.

Primjer 7.:

C: SunExpress 009, contact Langen Radar (on) 136,125

P: 136,125, SunExpress 009

C: SunExpress 009, correct

4.3.4. Kontrola brzine

Uz navedenu frazeologiju za komunikaciju sa zrakoplovima u slijetanju i polijetanju postoje i propisane procedure za davanje instrukcija vezane uz kontrolu brzine. U primjeru 8. vidljivo je korištenje frazeologije kada zrakoplov nije vidljivo prebrz i leti kontroloru nepoznatom brzinom. Primjer 9. je prikaz same odluke kontrolora zračnog prometa kako bi usporio brzinu zrakoplova. Brzine podliježu ponavljanju odobrenja te je potrebno na kraju ispravnog ponavljanja izreći „correct“.

Primjer 8.:

C: Cedar jet 621, report speed

P: Cedar jet 621, speed 250 knots

C: Cedar jet 621, roger, reduce speed to 230 knots

P: Reducing speed to 230 knots, Cedar jet 621

C: Cedar jet 621, correct

Primjer 9.:

C: Cedar jet 621, speed 230 knots

P: Speed 230 knots, Cedar jet 621

C: Cedar jet 621, correct

5. Usporedba korištene frazeologije s važećim propisima

U ovome poglavlju navedeni su primjeri neispravno korištene radiotelefonske komunikacije pri simuliranim vježbama u terminalnom zračnom prostoru Frankfurt uz ispravke sa standardnom frazeologijom. Primjeri pogrešaka podijeljeni su prema kategorijama prikazanim u sljedećim potpoglavljima. Analiza kategorija pogrešaka biti će prikazana u sljedećem poglavlju.

5.1. Neizgovorena fraza „correct“ i pozivni znak

Pogreške koje su studenti najviše griješili uključuju nepotvrđivanje točnosti ponovljenog odobrenja koju je izrekao pseudo-pilot i neizgovaranje pozivnog znaka zrakoplova. Radi lakšeg razumijevanja pogrešaka dodane su izgovorene transmisije pseudo-pilota.

Primjer 1.:

C: SunExpress 111, turn right direct to OLALI

P: Turning right direct to OLALI, SunExpress 111

Ispravno: *C: SunExpress 111, correct*

Primjer 2.:

C: Turkish 218, turn right heading 040, descend to 3 thousand feet, cleared for ILS approach runway 07, report ILS established

P: Turning right heading 040, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Croatia 459, correction, Turkish 218

C: Turkish 218, resume normal speed

Ispravno: *C: Turkish 218, correct, resume normal speed*

Primjer 3.:

C: Turkish 163, Langen Radar, identified, leave OLALI heading 275, descend to flight level 110, vectoring for ILS approach runway 07

P: To leave OLALI a heading 275, a please repeat level, Turkish 163

C: Descend to flight level 110

Ispravno: *C: Turkish 163, descend to flight level 110*

5.2. Netočan izgovor brojke četiri

Analizom ove kategorije pogrešaka uočeno je da od troje studenata, samo jedan točno izgovarao brojku četiri (fow-er).

Primjer 1.:

C: Turkish 789, Langen Radar, identified, fly heading 2 four 0, descend to flight level 60, vectoring for ILS approach runway 07

Ispravno: *C: Turkish 789, Langen Radar, identified, fly heading 2 fower 0, descend to flight level 60*

Primjer 2.:

C: Turkish 163, turn right heading 3 four 0

Ispravno: *C: Turkish 163, turn right heading 3 fower 0*

Primjer 3:

C: Lufthansa 996, descend to four thousand feet

Ispravno: *Lufthansa 996, descend to fower thousand feet*

5.3. Pogreške nepotpune frazeologije

Pogreške svrstane u ovu kategoriju uključuju bitne dijelove frazeologije koji su ostali neizgovoreni. Uz izostavljanje dijelova frazeologije pet puta se pojavila pogreška u kojoj je

redoslijed instrukcije bio krivi. Izostavljeni dijelovi frazeologije prikazani su u sljedećim primjerima.

Primjer 1.:

C: SunExpress 936, Langen Radar, identified, fly heading 320, descend to 5 thousand feet, QNH 1013

Ispravno: *SunExpress 936, Langen radar, identified, fly heading 320, descend to 5 thousand feet, QNH 1013, vectoring for ILS approach runway 07*

Primjer 2.:

C: Lufthansa four 76, a.. cleared for ILS approach runway 07, descend to 3 thousand feet

Ispravno: *Lufthansa fower 76, descend to 3 thousand feet, cleared for ILS approach runway 07, report ILS established*

Primjer 3.:

C: SunExpress 118, a cleared to XINLA

Ispravno: *C: SunExpress 118, cleared direct to XINLA*

5.4. Neuporaba fraze „correction“, „roger“ i „negative“

Zbog nedoumica pri odrađivanju vježbi, studenti su znali zamuckivati i izgovoriti dio riječi te bi se istog trena ispravili, ali bi pri tome zaboravili upotrijebiti standardnu frazu „correction“. Također fraza „roger“, kada je bilo potrebno, bila je rijetko izrečena. U samo četiri transmisije u kojima je trebalo izgovoriti frazu „negative“, nijedna nije bila izrečena.

Primjer 1.:

C: Croatia 007, descend to 3 thousand feet, cleared for aa appro.. cleared for ILS approach runway 07, report ILS established

Ispravno: *C: Croatia 007, descend to 3 thousand feet, cleared for aa appro..correction, cleared for ILS approach runway 07 ,report ILS established*

Primjer 2.:

P: Turkish 205, ILS established

C: Turkish 205, contact Frankfurt Tower 119,9

Ispravno: *C: Turkish 205, roger, contact Frankfurt Tower (on) 119,9*

Primjer 3.:

C: Cargolux 932, Langen Radar, identified, turn left heading 360, climb to flight level 250

P: Turning left heading 360, climbing flight level 220, Cargolux 932

C: Cargolux 932, climb to flight level 250

Ispravno: *C: Cargolux 932, negative, climb to flight level 250*

5.5. Pogreške u izgovoru imena i nestandardnih fraza

Analizom ovih pogrešaka uočeno je da su studenti imali problema s izgovorom imena jedinica kontrole zračnog prometa i pozivnim znakom zrakoplova. Također je zapaženo da je jedan od studenata često je upotrebljavao prijedlog „at“, što je netočno. U ovu kategoriju svrstane su pogreške izgovora razine leta (FL 100) koje su se pojavile tri puta.

Primjer 1.:

C: Cargolux 932, are you airborne

Ispravno: *C: Cargolux 932, Langen Radar*

Primjer 2.:

C: Lufthansa 996, contact Frenkfurt Tower at 119,9

Ispravno: *C: Lufthansa 996, roger, contact Frankfurt Tower (on) 119,9*

Primjer 3.:

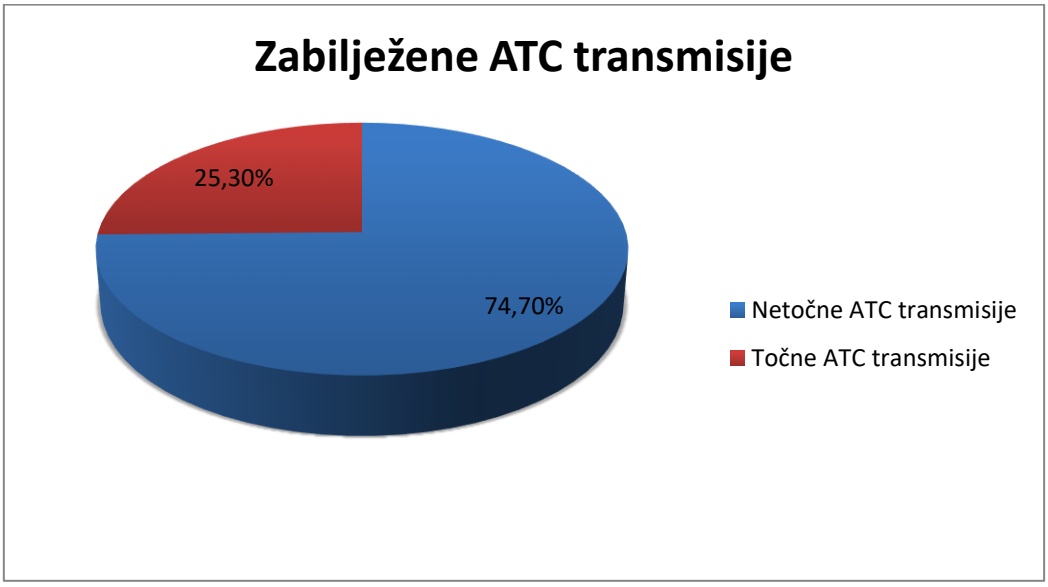
C: SunExpress 777, Langen Radar, identified, leave OLALI heading 290, descend to flight level one zero zero, vectoring for ILS approach runway 07

Ispravno: *C: SunExpress 777, Langen Radar, identified, leave OLALI heading 290, descend to flight level one hundred, vectoring for ILS approach runway 07*

6. Analiza i usporedba RTF pogrešaka u simuliranim vježbama

Pri radu na projektu, studenti su ukupno odradili deset vježbi računajući da je posljednja, deseta vježba bila ispitna. Analiza RTF pogrešaka napravljena je na temelju tri različitih vrsti vježbi pod nazivima *EXE 1, EXE 2* i *EXE 3* te se svaka vrsta vježbi odrađivala na deset različitih načina. Na projektu je sudjelovalo 14 studenata. Svi studenti koji su odrađivali vježbe pohađaju Fakultet prometnih znanosti u Zagrebu na smjeru aeronautike, modul Kontrola leta. Napravljena je analiza audio snimaka tri vježbe koje su odradili troje studenata.

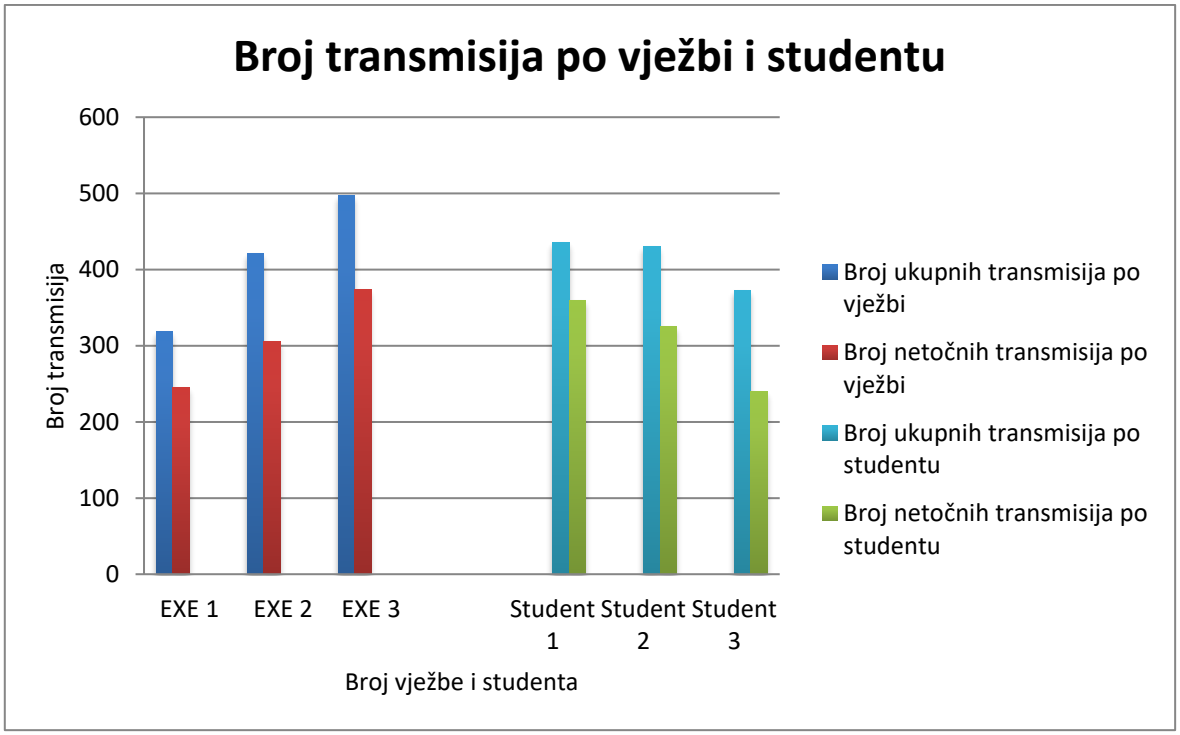
Analizom vježbi simuliranog terminalnog zračnog prostora Frankfurt uočeno je da je najduža vježba bila vježba pod nazivom EXE 3, koja je sadržavala i najveći broj zrakoplova. Vježba EXE 1 imala je promet od osam zrakoplova, vježba EXE 2 broj od 11 zrakoplova, dok je vježba EXE 3 imala 12 zrakoplova. Od ukupno 1 237 analiziranih transmisija studenata, zabilježeno je da je samo 25,30% transmisija bilo točno kao što je prikazano i u grafikonu 1.



Grafikon 1: Postotak točnih i netočnih ATC transmisija

U grafikonu 2 vidi se broj ukupnih transmisija i koliko je iznosio broj netočnih transmisija zasebno po vježbama i studentima. U vježbi EXE 1 zabilježeno je 319 ukupnih transmisija od kojih je 245 bilo netočno. U vježbi EXE 2 uočeno je 305 netočnih transmisija od ukupno 421 transmisije, a u vježbi EXE 3 zabilježeno je da od ukupno 497 transmisija, 374

bile su netočne. Iz tih podataka može se reći da su najveći postotak netočnih transmisija studenti napravili pri vježbi EXE 1 čineći 76,80%, a u vježbi EXE 2 najmanje u postotku od 72,45%. Uspoređujući broj ukupnih transmisija po studentima, uočljivo je da je Student 1 imao najveći broj od 435 transmisija, Student 2 imao je 430 transmisija, a 372 transmisije imao je Student 3. Ako se za usporedbu uzme postotak netočnih transmisija za svakog pojedinog studenta uvidjet će se da je Student 1 imao 82,53% netočnih transmisija, 75,58% netočnih transmisija imao je Student 2, a Student 3 imao je najmanji postotak netočnih transmisija koji iznosi 64,52%.



Grafikon 2: Broj zabilježenih transmisija po vježbama i po studentima

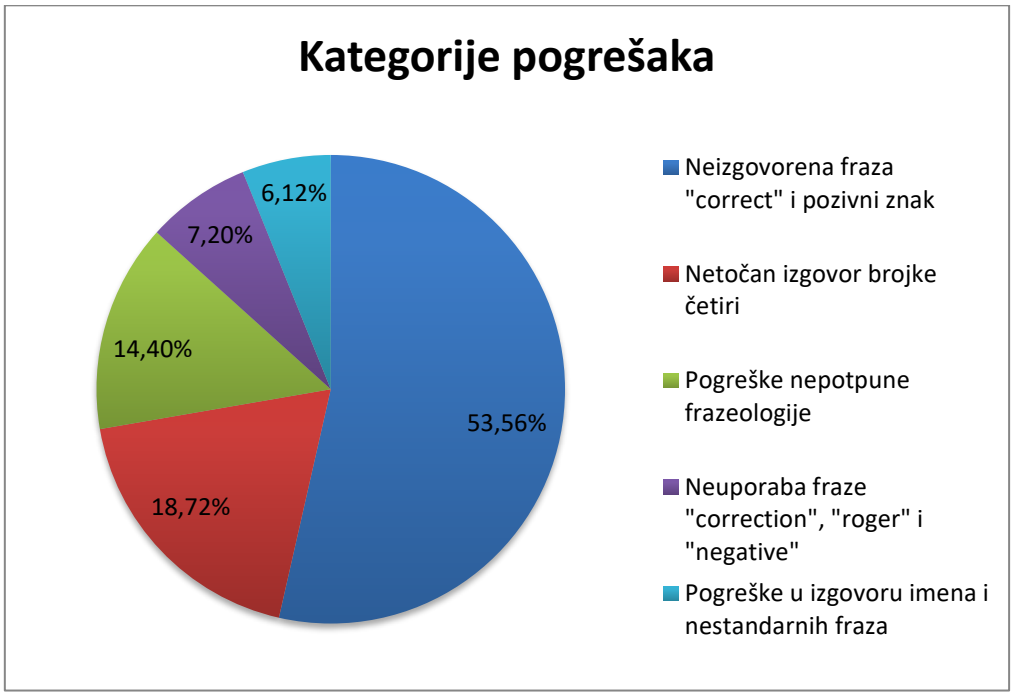
6.1. Kategorije pogrešaka

Zbog velikog broja pogrešaka kao što su neizgovaranje fraze „correct“ i netočan izgovor brojke četiri, postavljene su u dvije zasebne kategorije. RTF pogreške koje su studenti-kontrolori radili tijekom devet snimki, svrstane su u pet kategorija:

1. *Neizgovorena fraza „correct“ i pozivni znak*
2. *Netočan izgovor brojke četiri*
3. *Pogreške nepotpune frazeologije*

4. *Neuporaba fraze „correction“, „roger“ i „negative“*
5. *Pogreške u izgovoru imena i nestandardnih fraza*

Pri analizi je zabilježeno ukupno 1 111 pogrešaka. Najveći postotak pogrešaka koji čini 53,56%, smješten je u kategoriji „Neizgovorena fraza „correct“ i pozivni znak“. Kategorija „Pogreške u izgovoru imena i nestandardnih fraza“ sadrži najmanji postotak pogrešaka u odnosu na ostale i iznosi 6,12% kako je prikazano u grafikonu 3.

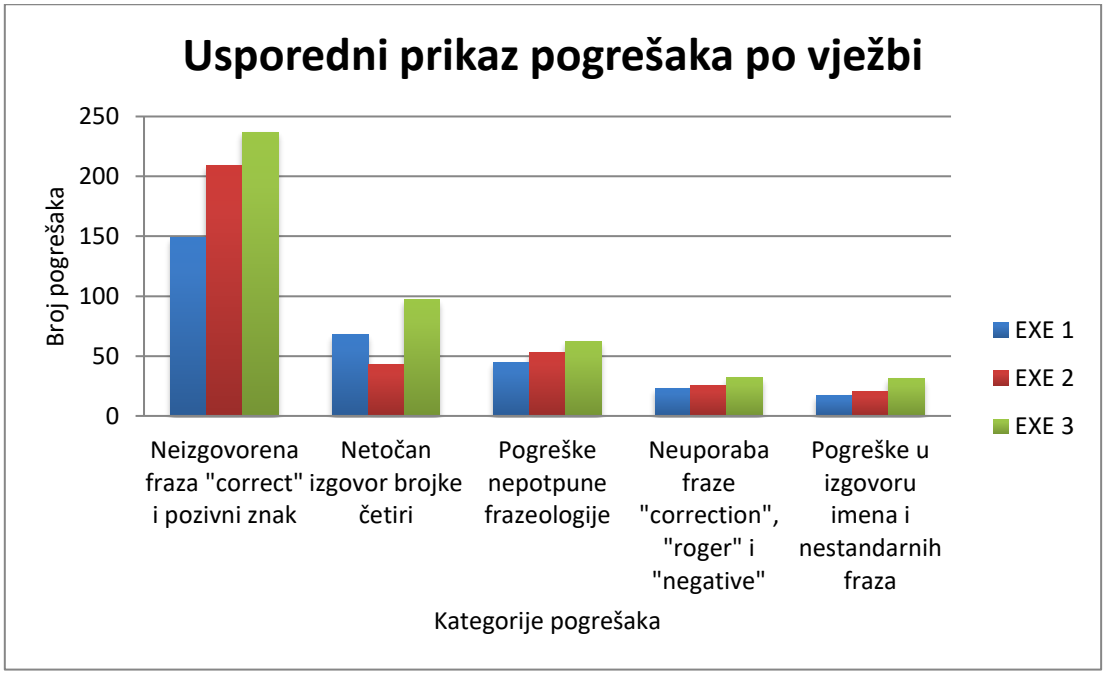


Grafikon 3: Kategorije pogrešaka

Uspoređujući kategorije pogrešaka po vježbama jasno je vidljivo da je u vježbi EXE 3 učinjen najveći broj svih kategorija pogrešaka. To je očekivani rezultat zbog najvećeg broja transmisija i najvećeg broja prometa. Najveći broj od 237 pogrešaka vježbe EXE 3, nalazi se u kategoriji „Neizgovorena fraza „correct“ i pozivni znak“, a najmanji broj pogrešaka vježbe EXE 3 u iznosu od 31 pogreške, nalazi se u kategoriji „Pogreške u izgovoru imena i nestandardnih fraza“.

Također iz grafikona 4 vidljivo je da su studenti pri vježbi EXE 1 učinili najmanji broj svih vrsta pogrešaka, osim u kategoriji „Netočan izgovor brojke četiri“ u kojoj je učinjeno 68

pogrešaka. Najmanji broj pogrešaka te kategorije zabilježen je u vježbi EXE 2 u iznosu od 43 pogreške.

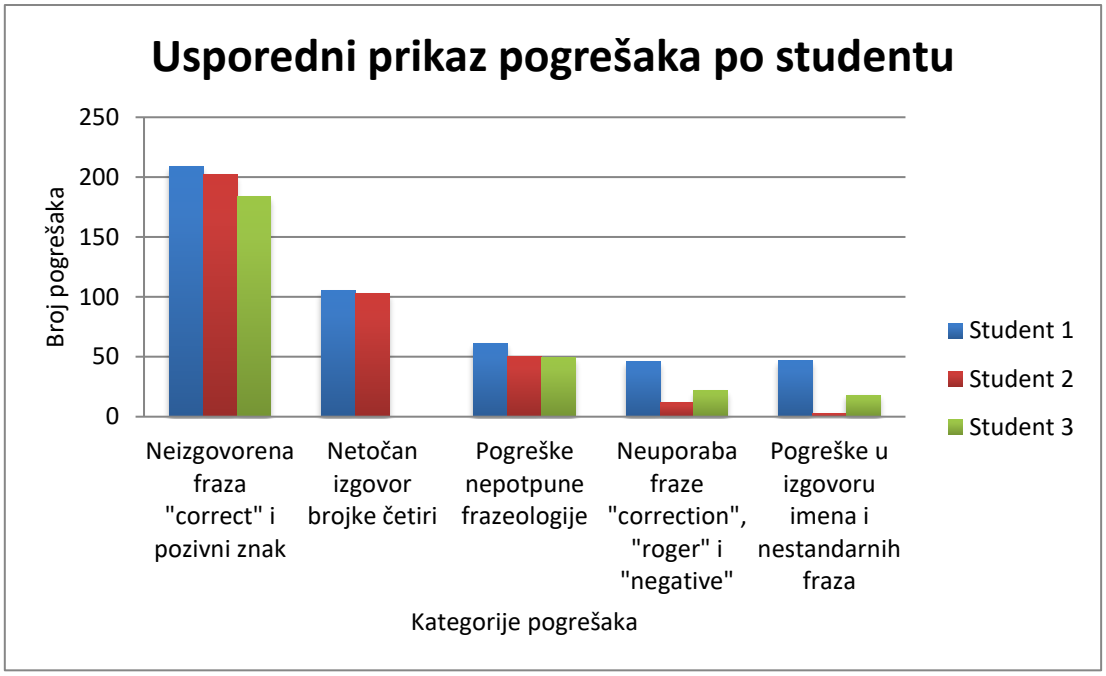


Grafikon 4: Kategorije pogrešaka po vježbi

Usporedbom kategorija pogrešaka po studentima, zabilježeno je da su svi studenti imali najviše pogrešaka u kategoriji „Neizgovorena fraza „correct“ i pozivni znak“. U toj kategoriji Student 1 imao je 209 pogrešaka, Student 2 imao je 202 pogreške, dok je 184 pogreške imao Student 3.

Najmanji broj pogrešaka u kategoriji „Netočan izgovor brojke četiri“ imao je Student 3, to jest nijednu pogrešku, Student 2 učinio je 103 pogreške, a Student 1 imao je 105 pogrešaka.

U kategoriji „Pogreške nepotpune frazeologije“, 61 pogrešku u toj kategoriji imao je Student 1, Student 2 napravio je 50 pogrešaka, dok je Student 3 učinio 49 pogrešaka, kako je prikazano u grafikonu 5.



Grafikon 5: Prikaz pogrešaka po studentu

U kategoriji „Neuporaba fraze „correction“, „roger“ i „negative““ , Student 1 učinio je 46 pogrešaka, a za samo jednu pogrešku više imao je u kategoriji „Pogreške u izgovoru imena i nestandardnih fraza“.

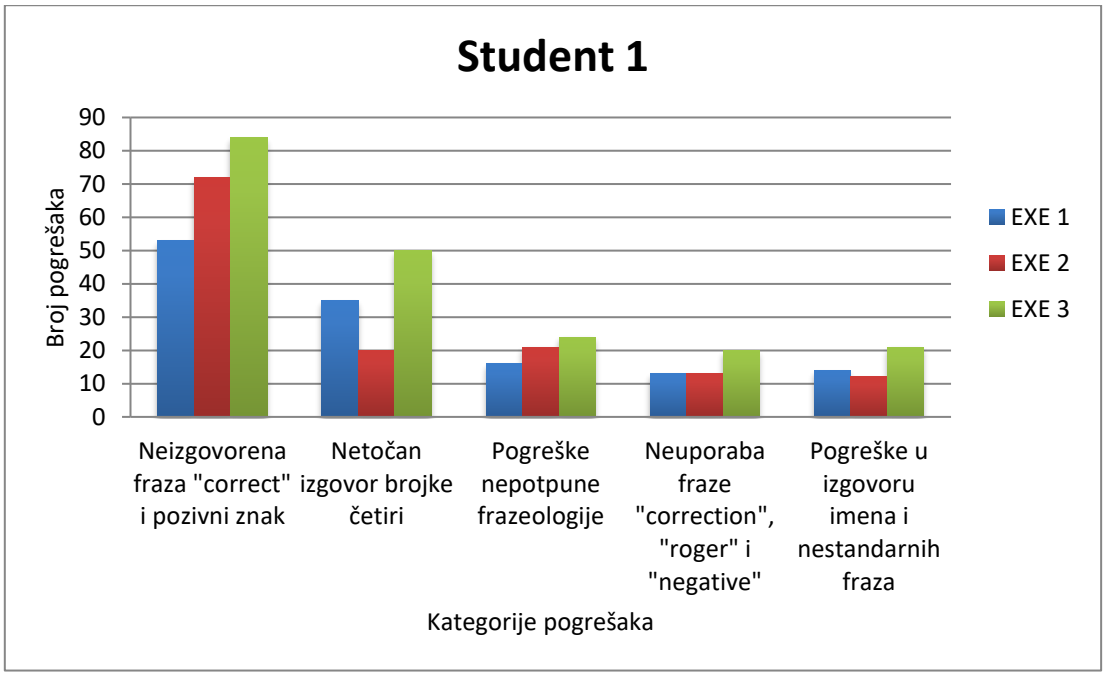
Za Studenta 2 zabilježeno je 12 pogrešaka u kategoriji „Neuporaba fraze „correction“, „roger“ i „negative““ i samo tri pogreške u kategoriji „Pogreške u izgovoru imena i nestandardnih fraza“. 22 pogreške u kategoriji „Neuporaba fraze „correction“, „roger“ i „negative““ i 18 pogrešaka u kategoriji „Pogreške u izgovoru imena i nestandardnih fraza“ učinio je Student 3.

6.2. Usporedba pojedinog studenta po vježbama

Analizom pogrešaka napravljene su usporedbe RTF pogrešaka po svakom studentu zasebno. Usporedba je provedena po pojedinoj vježbi i koliko je iznosio broj pogrešaka u svakoj kategoriji.

6.2.1. Analiza pogrešaka Studenta 1

Pri analizi grafikona 6 vidi se da je Student 1 u kategoriji „Neizgovorena fraza „correct“ i pozivni znak“ imao najviše pogrešaka među svim studentima. Najveći broj zabilježenih pogrešaka bilo je u vježbi EXE 3 i iznosilo je 84 pogreške. U toj istoj kategoriji najmanji broj pogrešaka napravio je u vježbi EXE 1 kada je učinio 53 pogreške. Jedino u vježbi EXE 2 sa napravljenih 72 pogreške, nije imao najviše pogrešaka među svim studentima u toj vježbi.



Grafikon 6: Pogreške Studenta 1 kroz vježbe

Nadalje, iznos od 20 pogrešaka iz kategorije „Netočan izgovor brojke četiri“ u vježbi EXE 2 bio je najmanji od sve tri vježbe, dok je najviše napravio u vježbi EXE 3 kada je imao 50 pogrešaka, što je bilo najviše u toj kategoriji među svim studentima.

U usporedbi s ostalim studentima, 24 pogreške koje je Student 1 učinio u vježbi EXE 3 u kategoriji „Pogreške nepotpune frazeologije“, bio je najveći broj pogrešaka među svim studentima u toj kategoriji.

Pri vježbi EXE 3 u kategoriji „Neuporaba fraze „correction“, „roger“ i „negative““, napravio je 20 pogrešaka te je taj broj ujedno i najveći broj pogrešaka među svim studentima

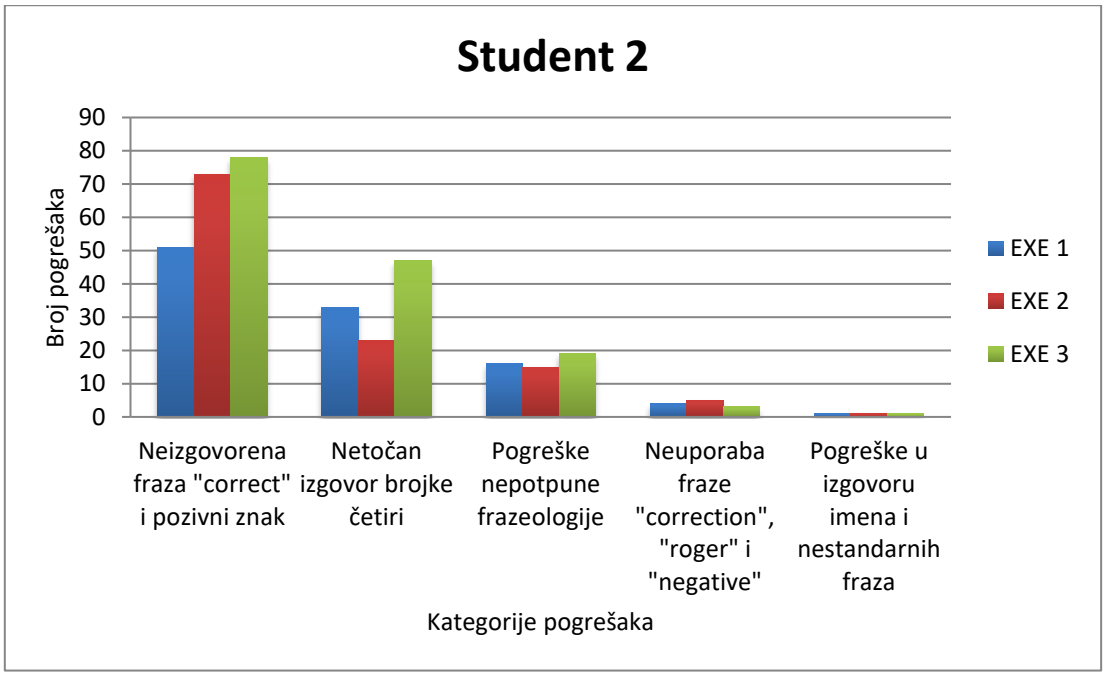
u toj kategoriji. U vježbama EXE 1 i EXE 2, pri istoj kategoriji, učinjen je jednak broj pogrešaka koje su se pojavile 13 puta što je više od pogrešaka ostalih studenata u obje vježbe.

U kategoriji „Pogreške u izgovoru imena i nestandardnih fraza“, Student 1 također je imao najviše pogrešaka među svim studentima u sve tri vježbe. U vježbi EXE 1 imao je 14 pogrešaka, u vježbi EXE 2 12 pogrešaka te 21 pogrešku u vježbi EXE 3.

6.2.2. Analiza pogrešaka Studenta 2

Student 2 imao je najmanji broj pogrešaka u kategoriji „Neizgovorena fraza „correct“ i pozivni znak“ u vježbi EXE 1, kada je napravio 51 pogrešku. U toj kategoriji najveći broj od 78 pogrešaka imao je u vježbi EXE 3. U vježbi EXE 2 napravio je 73 pogreške, što je najveći broj pogrešaka među sva tri studenta u toj vježbi.

Prema grafikonu 7, najveći broj pogrešaka u kategoriji „Netočan izgovor brojke četiri“ imao je u vježbi EXE 3 kada je napravio 47 pogrešaka. U vježbi EXE 2 imao je 23 pogreške što je najveći broj pogrešaka u toj kategoriji među svim studentima u toj vježbi.



Grafikon 7: Pogreške Studenta 2 kroz vježbe

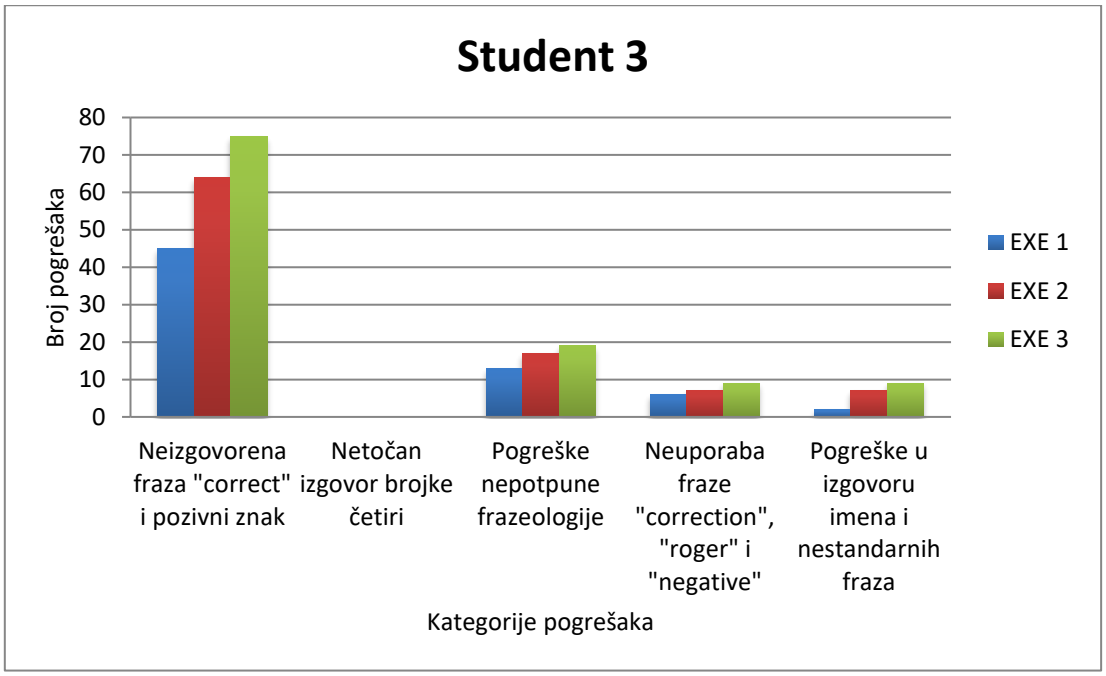
U kategoriji „Pogreške nepotpune frazeologije“ najveći broj pogrešaka imao je u vježbi EXE 3 kada je napravio 19 pogrešaka. Najmanji broj od 15 pogrešaka imao je u vježbi EXE 2 što je ujedno i najmanji broj pogrešaka među svim studentima u toj vježbi.

U kategoriji „Neuporaba fraze „correction“, „roger“ i „negative““ Student 2 imao je najmanji broj pogrešaka u sve tri vježbe među svim studentima. Najmanji broj pogrešaka imao je u vježbi EXE 3 kada je napravio tri pogreške.

Najmanji broj pogrešaka među svim studentima imao je i u kategoriji „Pogreške u izgovoru imena i nestandardnih fraza“ kada je u sve tri vježbe napravio po jednu pogrešku.

6.2.3. Analiza pogrešaka Studenta 3

Student 3 imao je u sve tri vježbe najmanji broj pogrešaka među svim studentima u kategoriji „Neizgovorena fraza „correct“ i pozivni znak“. Kao i preostala dva studenta najmanji broj pogrešaka imao je u vježbi EXE 1, kada je napravio 45 pogrešaka, a najveći broj pogrešaka u vježbi EXE 3 kada je imao 75 pogrešaka, što se vidi u grafikonu 8.



Grafikon 8: Pogreške Studenta 3 kroz vježbe

U kategoriji „Netočan izgovor brojke četiri“ u sve tri vježbe, Student 3 nije učinio niti jednu pogrešku. Za razliku od ostalih studenata, Student 3 je pravilno izgovarao brojku četiri.

U kategoriji „Pogreške nepotpune frazeologije“ imao je sličan broj pogrešaka kao i Student 2. Najveći broj od 19 pogrešaka imao je u vježbi EXE 3, dok je najmanji broj od 13 pogrešaka imao u vježbi EXE 1, to je ujedno bio i najmanji broj pogrešaka među svim studentima u sve tri vježbe.

Najveći broj pogrešaka u kategoriji „Neuporaba fraze „correction“, „roger“ i „negative““ imao je u vježbi EXE 3 kada je učinio devet pogrešaka, dok je šest pogrešaka učinio u vježbi EXE 1 što mu je bio najmanji broj pogrešaka u toj kategoriji.

Kao i Student 2, najmanji broj pogrešaka imao je u kategoriji „Pogreške u izgovoru imena i nestandardnih fraza“ kada je u vježbi EXE 1 napravio dvije pogreške, u vježbi EXE 2 sedam pogrešaka i u vježbi EXE 3 devet pogrešaka.

7. Zaključak

Uvidom u analizu RTF pogrešaka studenata - kontrolora zračnog prometa snimljenih pri radu na vježbama EXE 1, EXE 2 i EXE 3 u sklopu Erasmus+ projekta „ATCOSIMA“, može se zaključiti da što je veći kapacitet zračnog prometa, veći je i broj transmisija, a time raste i pojavnost neispravno korištene frazeologije. Unatoč tome što su studenti imali radiotelefonsku komunikaciju u sklopu školovanja na Fakultetu prometnih znanosti, broj pogrešaka je veći od očekivanog. Studenti - kontrolori zračnog prometa često, u 50,30% slučajeva, nisu izgovarali potvrdu točnosti ponovljenog odobrenja koju je izrekao pseudo-pilot, te su tako pilotova pogrešno ponovljena odobrenja ostala bez kontrolorove reakcije i ispravke. Kompleksnost, velika gustoća prometa te nedostatak vremena za reakciju pri odrađivanju vježbi mogući je razlog za neizgovaranjem potvrde točnosti ponovljenog odobrenja. U komunikaciji u zrakoplovstvu takve pogreške mogu imati velike posljedice na sigurnost i protok zračnog prometa.

Naravno, pojavile su se i sitne pogreške koje najvjerojatnije nemaju utjecaja na sigurnost u prometu, ali svakako je poželjno i trebalo bi se pridržavati ispravnih, jasnih i sažetih odobrenja kako ne bi bilo nesporazuma u izrečenoj instrukciji koja je zadana pilotu. U svakom školovanju broj pogrešaka je prisutan. Pri ovoj analizi uočeno je da je broj pogrešaka bio učestaliji zbog većeg broja prometa i rada na novom zračnom prostoru. Dinamična kretanja zrakoplova u malom zračnom prostoru i nedostatak pažnje su dodatni razlozi zašto je došlo do većeg broja pogrešaka.

Standardna frazeologija je značajan faktor kako u komunikaciji zemaljskih stanica i pilota tako i općenito u zrakoplovstvu. Zato se teži tome da se frazeologija olakša i poboljša i tako omogući nesmetanu, razgovjetnu i jasnu komunikaciju između sudionika u zračnom prometu. Uz današnju modernu tehnologiju, postoji mogućnost da se potvrde točnosti ponovljenog odobrenja više ne moraju izgovarati, nego samo da se pogrešno ponovljena odobrenja trebaju ispraviti. Trebalo bi imati na umu da bi možda takva promjenu se moglo uvesti pri sljedećoj izradi pravilnika za korištenje standardne frazeologije.

Situacijska svjesnost je od značajne važnosti za rad prilaznog kontrolora zračnog prometa. Kretanje zrakoplova u prilaznom zračnom prostoru vrlo je dinamično, od čestih promjena smjerova leta do penjanja na određenu visinu i spuštanja na određenu visinu, te

vektoriranja za završni prilaz pri slijetanju. Sve te promjene odvijaju se u malom zračnom prostoru. Zbog tih razloga, pogreške u komunikaciji su nedopustive i mogu uzrokovati nesporazum u komunikaciji te tako ugroziti sigurnost zračnog prometa. Da bi se spriječile pojave pogrešaka te da bi se načini rada poboljšali, kontrolori zračnog prometa od samih početaka vježbaju na simulacijama u svome školovanju baš kao i studenti Fakulteta prometnih znanosti koji su odradili vježbe u simuliranom terminalnom zračnom prostoru Frankfurt.

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Prilozi transkribiranih snimaka studenata na simuliranim vježbama

Pri transkripciji snimaka studenata, crvenom bojom označene su RTF pogreške, te u zagradama nadodane fraze koje nisu izrečene, a trebali bi biti.

Prilog 1. Transkripti vježbi Studenta 1

Transkript vježbe EXE 1

P: Langen Radar, Turkish 163, dobar dan, inbound OLALI, maintaining flight level 220

C: Turkish 163, Langen Radar, identified, leave OLALI heading 280, descend to flight level 90, vectoring for ILS approach runway 07

P: After OLALI heading 280, descending to flight level 90, vectoring for ILS approach runway 07, Turkish 163 (C: Turkish 163, correct)

P: Langen Radar, Lufthansa 996, dobar dan, inbound SIRPO, maintaining flight level 210

C: Lufthansa 996, Langen Radar, identified, leave SIRPO heading 280, descend to flight level 10, vectoring for ILS approach runway 07

P: To leave SIRPO heading 280, confirm descend to flight level 10, vectoring for ILS approach runway 07, Lufthansa 996

C: Lufthansa 996, (correction), descend to flight level one zero zero

P: Descending to flight level 100, Lufthansa 996 (C: Lufthansa 996, correct)

P: Langen Radar, Turkish 205, dobar dan, inbound XINLA, maintaining flight level 210

C: Turkish 205, Langen Radar, identified, leave XINLA heading 315, descend to a .. 3 thousand feet, QNH 1013, vectoring for ILS approach runway 07

P: After XINLA heading 315, descending to 3 thousand feet on QNH 1013, Turkish 205, vectoring for ILS approach runway 07 (C: Turkish 205, correct)

P: Langen Radar, Scandinavian 246, dobar dan, inbound KERAX, maintaining flight level 210

C: Scandinavian 2 four 6, Langen Radar, identified, leave KERAX heading 250, descend to flight level 110, vectoring for ILS approach runway 07

P: Leave KERAX heading a 250, descending to flight level 110, vectoring for ILS approach runway 07, Sckandinavian 246 (C: Scandinavian 2 fower 6, correct)

P: Langen Radar, SunExpress 118, airborne

C: SunExpress 118, Langen Radar, identified on runway heading climb to flight level 250

P: On runway heading to climb to flight level 250, SunExpress 118 (C: SunExpress 118, correct)

P: Langen Radar, Iberia 882, dobar dan, inbound ROLIS, maintaining flight level 220

C: Iberia 882, Langen Radar, identified, leave k..a.. (correction) leave COLAS heading 150, descend to flight level a.. (correction) descend to four thousand feet, QNH 1013, vectoring for ILS approach runway 07

P: Flying heading 150, a descending to 4 thousand feet on QNH 1013, vectoring for ILS approach runway 07, Iberia 882 (C: Iberia 882, correct)

P: Langen Radar, Lufthansa 476, dobar dan, inbound PIPEP, maintaining flight level 230

C: Lufthansa four 76, Langen Radar, identified, a descend to flight level descend to, correction, descend to 5 thousand feet, QNH 1013, expect ILS approach runway 07

P: Descending to 5 thousand feet on QNH 1013, a roger, Lufthansa 476 (C: Lufthansa Fower 76, correct)

P: Langen Radar, Lufthansa 461, a airborne

C: Lufthansa four 61, Langen Radar, identified, on runway heading climb to flight level 2 four 0

P: On runway heading to climb to flight leve 240, Lufthansa 461

C: Lufthansa four 61, (correction), climb to flight level 250

P: Climbing to flight level 250 , Lufthansa 461 (C: Lufthansa fower 61, correct)

C: Iberia 882, report speed

P: Iberia 8822, speed is 250 knots indicated

C: Iberia 882, (roger), reduce speed to 230 knots

P: Reducing speed to 230 knots, Iberia 882 (C: Iberia 882, correct)

C: SunExpress 118, a cleared (direct) to XINLA

P: Cleared to XINLA, SunExpress 118 (C: SunExpress 118, correct)

C: Lufthansa 996, report speed

P: Lufthansa 996, speed is 250 knots indicated

C: Lufthansa 996, (roger), reduce speed (to) 230 knots

P: Reducing speed to 230 knots a, Lufthansa 996 (C: Lufthansa 996, correct)

C: Turkish 163, reduce speed (to) 230 knots

P: Turkish a correction reducing speed to 230 knots, Turkish 163 (C: Turkish 163, correct)

C: SunExpress 2 four 6, reduce speed (to) 230 knots

C: Correction..

P: Red..

P: Double transmission, double transmission, please say again

C: Scandinavian 2 four 6, reduce speed (to) 230 knots

P: Reducing speed to 230 knots, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Lufthansa four 61, cleared direct to RASVO

P: Cleared direct to RASVO, Lufthansa 461 (C: Lufthansa fower 61, correct)

C: Lufthansa 996, descend to flight level 60

P: Descending to flight level 60, Lufthansa 996 (C: Lufthansa 996, correct)

C: Turkish 163, descend to flight level 70

P: Descending to flight level 70, Turkish 163 (C: Turkish 163, correct)

C: Scandinavian 2 four 6, descend to flight level 60

P: Descending to flight level 60, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Lufthansa four 61, contact Lengen Radar (on) 120,150

P: 120,150, Lufthansa 461, bye (C: Lufthansa fower 61, correct)

C: SunExpress 118, contact Langen Radar (on) 136,125

P: 136,125, SunExpress 118 (C: SunExpress 118, correct)

C: Iberia 882, reduce speed (to) 210 knots

P: Reducing speed to 210 knots, Iberia 882 (C: Iberia 882, correct)

C: Turkish 205, turn right heading 335

P: Turning right heading 335, Turkish 205 (C: Turkish 205, correct)

C: Iberia 882, turn right heading 160

P: Turning right heading 160, Iberia 882 (C: Iberia 882, correct)

C: Lufthansa four 76, turn left heading 125, reduce speed (to) 230 knots

P: Turning left heading 125, reducing speed to 230 knots, Lufthansa 476 (C: Lufthansa fower 76, correct)

C: Lufthan..

C: Turkish 205, turn right heading 0 four 0, cleared for ILS approach runway 07, report ILS established

P: Turning right heading 040, cleared for ILS approach, wilco, Turkish 205 (C: Turkish 205, correct)

C: Iberia 882, turn left heading 130

P: Turning left heading 130, Iberia 882 (C: Iberia 882, correct)

C: Iberia 882, descend to 3 thousand feet

P: Descending to 3 thousand feet, Iberia 882 (C: Iberia 882, correct)

C: Lufthansa four 76, descend to four thousand feet

P: Descending to 4 thousand feet, a Lufthansa 476 (C: Lufthansa fower 76, correct)

C: Lufthansa four 76, reduce speed (to) 210 knots

P: Reducing speed 210 knots, Lufthansa 476 (C: Lufthansa fower 76, correct)

C: Lufthansa four 76, turn left heading 100 to intercept localizer (runway 07)

P: Turning left heading 100, a roger, Lufthansa 476 (C: Lufthansa fower 76, correct)

P: Turkish 205, we have established on ILS for runway 07

C: Turkish 205, (roger), contact Frenkfurt Tower on 119,9

P: 119,9 a Turkish 205

C: Turkish 205, correct, breakbreak, Lufthansa 996 turn left heading 250

P: Turning left heading 250, Lufthansa 996 (C: Lufthansa 996, correct)

C: Turkish 163, turn left heading 250

P: Turning left heading 250, Turkish 163 (C: Turkish 163, correct)

C: Iberia 882, turn left heading 100, cleared for ILS approach runway 07, report ILS established

P: Turning left heading 100, cleared for ILS approach runway 07, wilco, Iberia 882 (C: Iberia 882 correct)

C: Lufthansa four 76, a.. cleared for ILS approach runway 07, descend to 3 thousand feet (report ILS established)

P: Cleared for ILS approach runway 07, descending to 3 thousand feet, Lufthansa 476

C: Lufthansa four 76, correct

C: Lufthansa four 76, overshooting localizer, turn left heading 030, cleared for ILS approach runway 07 (report ILS established)

P: On heading 030, cleared for ILS approach runway 07, Lufthansa 476 (C: Lufthansa fower 76, correct)

P: Iberia 882, established on ILS for runway 07

C: Iberia 882, (roger), contact Fr.. Frenkfurt Tower at 119,9

P: 119,9, Iberia 882 (C: Iberia 882, correct)

C: Lufthansa 996, descend to four thousand feet (QNH)

P: Descending to 4 thousand feet, Lufthansa 996 (C: Lufthansa 996, correct)

C: Lufthansa 996, turn right heading 3 four 0

P: Turning right heading 340, Lufthansa 996 (C: Lufthansa 996, correct)

C: Lufthansa 996, descend to 3 thousand feet

P: Descending to 3 thousand feet, Lufthansa 996 (C: Lufthansa 996, correct)

C: Turkish 163, descend to four thousand feet (QNH)

P: Descending to 4 thousand feet, Turkish 163 (C: Turkish 163, correct)

C: Scandinavian 2 four 6, descend to four thousand feet (QNH)

P: Descending to 4 thousand feet, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Scandinavian 2 four 6, turn right a.. correction turn left heading 20.. (correction turn left heading) 210

P: Turning left heading 210, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C:Lufthansa 996, turn right heading 0 four 0, cleared for ILS approach runway 07, report ILS established

P: Turning right heading 040, cleared for ILS approach runway 07, wilco, Lufthansa 996 (C: Lufthansa 996, correct)

P: Lufthansa 476, established on ILS for runway 07

C: Lufthansa four 76, (roger), contact Frenkfurt Tower at 119,9

P: 119,9, Lufthansa 476, bye (C: Lufthansa fower 76, correct)

C: Scandinavian 2 four 6, reduce speed (to) 210 knots

P: Reducing speed to 210 knots, Scandinavian 246 (C: Scandinavian 2 fower 6 correct)

C: Turkish 163, reduce speed to 210 knots

P: Reducing speed to 210 knots, Turkish 163 (C: Turkish 163, correct)

C: Scandinavian 2 four 6, turn left heading 115, a descend to 3 thousand feet

P: Turning left heading 115, descending to 3 thousand feet, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Scandinavian 2 four 6, turn left heading 090, cleared for ILS approach runway 07, report ILS established

P: Turning left heading 090, cleared for ILS approach runway 07, wilco, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Lufthansa 996, resume normal speed

P: Normal speed, Lufthansa 996

C: Scandinavian 2 four 6, resume normal speed

P: Normal speed, Scandinavian 246

C: Turkish 163, turn right heading 3 four 0

P: Turning right heading 340, Turkish 163 (C: Turkish 163, correct)

P: Lufthansa 996, a established on ILS for runway 07

C: Lufthansa 996, (roger), contact Frenkfurt Tower at 119,9

P: 119,9, Lufthansa 996 (C: Lufthansa 996, correct)

C: Turkish 163, descend to 3 thousand feet

P: Descending to 3 thousand feet, Turkish 163 (C: Turkish 163, correct)

C: Turkish 163, turn right heading 0 four 0, cleared for ILS approach runway 07, report ILS established

P: Turning right heading 040, cleared for ILS approach runway 07, wilco, Turkish 163

C: Turkish 163, (correct) fly speed 190 knots or less

P: Flying 190 knots or less, Turkish 163 (C: Turkish 163, correct)

P: Scandinavian 246, established on ILS for runway 07

C: Scandinavian 2 four 6, (roger), contact Fr.. Frenkfurt Tower (on) 119,9

P: 119,9, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

P: Turkish 163, established on ILS for runway 07

C: Turkish 163, (roger), contact Frenkfurt Tower at 119,9

P: 119,9, Turkish 163 (C: Turkish 163, correct)

Transkript vježbe EXE 2

P: Langen Radar, SunExpress 111, airborne, climbing to flight level 160

C: SunExpress 111, Langen Radar, identified, on runway heading climb to flight level 250

P: On runway heading climbing to flight level 250, SunExpress 111 (C: SunExpress 111, correct)

P: Langen Radar, Turkish 789, inbound KERAX, maintaining flight level 220

C: Turkish 789, Langen Radar, identified, leave KERAX heading 2 four 5, descend to four thousand feet, QNH 1013, vectoring for ILS approach runway 07

P: To leave KERAX heading 245, descending to 4 thousand feet, QNH 1013, vectoring for ILS approach runway 07, Turkish 789

C: Turkish 789, correction, fly heading 2 four 5

P: A.. turning heading 245, Turkish 789 (C: Turkish 789, correct)

C: Turkish 789, fly speed 250 knots or greater

P: Speed 250 knots or greater, Turkish 789 (C: Turkish 789, correct)

P: Langen Radar, SunExpress 936, inbound XINLA, maintaining flight level 220

C: SunExpress 936, Langen Radar, identified, leave XINLA heading 315, descend to four thousand feet, QNH 1013, vectoring for ILS approach runway 07

P: To leave XINLA heading 315, descending to flight level correction, 4 thousand feet, QNH 1013, vectoring for ILS approach runway 07, SunExpress 936

C: SunExpress 936, (correct) speed 250 knots or greater

P: Speed 250 knots or greater, SunExpress 936 (C: SunExpress 936, correct)

P: Langen Radar, KLM 992, airborne, climbing to flight level 160

C: KLM 992, Langen Radar, identified, on runway heading climb to flight level 250

P: On runway heading climbing to flight level 250, KLM 992 (C: KLM 992, correct)

P: Langen Radar, Cargolux 717, inbound SIRPO, maintaining flight level 220

C: Cargolux 717, Langen Radar, identified, leave SIRPO heading 280, descend to flight level 60, vectoring for ILS approach runway 07

P: To leave SIRPO heading 280, descending to flight level 60, vectoring for ILS approach runway 07, Cargolux 717 (C: Cargolux, 717, correct)

C: Cargolux 717, reduce speed (to) 230 knots

P: Reducing speed 230 knots, Cargolux 717 (C: Cargolux 717, correct)

P: Langen Radar, Lufthanda 246, inbound KERAX, maintaining flight level 220

C: Lufthansa 2 four 6, Langen Radar, identified, leave KERAX heading 250, descend to flight level 7z.. correction (descend to flight level) 80, vectoring for ILS approach runway 07

P: To leave KERAX heading 250, descending to flight level 80, vectoring for ILS approach runway 07, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

P: Langen Radar, Croatia 007, inbound OLALI, maintaining flight level 220

C: Croatia 007, Langen Radar, identified, leave OLALI heading 280, descend to flight level 70, vectoring for ILS approach runway 07

P: To leave OLALI heading 280, a.. descending to flight level 80, vectoring for ILS approach runway 07, Croatia 007 (C: Croatia 007, negative, descend to flight level 70)

C: Croatia 007, reduce speed (to) 230 knots

P: Reducing speed 230 knots, Croatia 007 (C: Croatia 007, correct)

P: Langen Radar, a.. Lufthansa 831, airborne

C: Lufthansa 831, (Langen Radar, identified) cleared a (correction) turn left direct to RASVO, climb to flight level 250

P: Turning left direct to RASVO, climbing to flight level 250, Lufthansa 831 (C: Lufthansa 831, correct)

P: Langen Radar, Turkish 399, inbound RASVO, maintaining flight level 220

C: Turkish 399, Langen Radar, identified, leave RASVO heading 115, descend to flight level 60, vectoring for ILS approach runway 07

P: Turning heading aa..115, descending to flight level 60, vectoring for ILS approach runway 07, Turkish 399 (C: Turkish 399, correct)

P: Langen Radar, Croatia 1311, inbound COLAS, maintaining flight level 220

C: Croatia 1311, Langen Radar, identified, leave COLAS heading 150, descend to 5 thousand feet, QNH 1013, vectoring for ILS approach runway 07

P: To leave a.. COLAS heading 150, descending to 5 thousand feet, QNH 1013, vectoring for ILS approach runway 07, Croatia 1311

C: Croatia 1311, (correct) reduce speed (to) 230 knots

P: Reducing speed 230 knots, Croatia 1311 (C: Croatia 1311, correct)

P: Langen Radar, KLM 2001, inbound KERAX, maintaining flight level 220

C: SunExpress 111, turn right direct to OLALI

P: Turning right direct to OLALI, SunExpress 111 (C: SunExpress 111, correct)

C: KLM 2001, Langen Radar, identified, leave KERAX heading 250, descend to flight level 90, vectoring for ILS approach runway 07

P: To leave KERAX heading 290, descending to flight, correction 250, descending to flight level 90, a.. vectoring for ILS approach runway 07, KLM 2001

C: KLM 2001, (correct) reduce speed (to) 230 knots

P: Reducing speed 230 knots, KLM 2001 (C: KLM 2001, correct)

C: Lufthansa 2 four 6, reduce speed (to) 230 knots

P: Reducing speed 230 knots, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: Turkish 399, reduce speed (to) 230 knots

P: Reducing speed 230 knots, Turkish 399 (C: Turkish 399, correct)

C: SunExpress 111, contact Langen Radar at 136,125

P: 136,125, SunExpress 111 (C: SunExpress 111, correct)

C: KLM 992, turn right direct to OLALI

P: Turning right direct to OLALI, KLM 992 (C: KLM 992, correct)

C: Cargolux 717, reduce speed (to) 210 knots

P: Reducing speed 210 knots, Cargolux 717 (C: Cargolux 717, correct)

C: Croatia 007, reduce speed (to) 210 knots

P: Reducing speed 210 knots, Croatia 007 (C: Croatia 007, correct)

C: KLM 2001, reduce speed to 210 knots

P: Reducing speed, 210 knots, KLM 200.a..1 (C: KLM 2001, correct)

C: Lufthansa 2 four 6, reduce speed (to) 210 knots

P: Reducing speed 210 knots, Lufthansa 246 (C: Lufthansa 246, correct)

C: SunExpress 936, turn right heading 320, descend to 3 thousand feet

P: Turning right heading 320, descending to 3 thousand feet, SunExpress 936 (C: SunExpress 936, correct)

C: KLM 992, contact Langen Radar at 136,125

P: 136,125, KLM 992 (C: KLM 992, correct)

C: Turkish 399, reduce speed (to) 210 knots

P: Reducing speed 210 knots, Turkish 399 (C: Turkish 399, correct)

C: Croatia 1311, reduce speed (to) 210 knots

P: Reducing speed 210 knots, Croatia 1311 (C: Croatia 1311, correct)

C: Lufthansa 831, contact Langen Radar at 120,150

P: 120 150, Lufthansa 831, bye (C: Lufthansa 831, correct)

C: SunExpress 936, resume normal speed

P: Normal speed, SunExpress 936

C: Croatia 1311, turn right heading 165

P: Turning right heading 165, Croatia 1311 (C: Croatia 1311, correct)

C: Turkish 789, turn left heading 230

P: Turning left heading 230, Turkish 789 (C: Turkish 789, correct)

C: Turkish 789, reduce speed (to) 230 knots

P: Reducing speed 230 knots, Turkish 789 (C: Turkish 789, correct)

C: Turkish 399, turn right heading 165

P: Turning right heading 165, Turkish 399 (C: Turkish 399, correct)

C: SunExpress 936, turn right heading 0 four 0, cleared for ILS approach runway 07, report ILS established

P: Turning right heading 040, cleared for ILS approach runway 07, wilco, SunExpress 936 (C: SunExpress 936, correct)

C: Cargolux 717, descend to four thousand feet, QNH 1013

P: Descending to 4 thousand feet, QNH 1013, ka.. Cargolux 717 (C: Cargolux, 717, correct)

C: Croatia 007, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, Croatia 007 (C: Croatia 007, correct)

C: Lufthansa 2 four 6, descend to flight level 70

P: Descending to flight level 70, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: KLM 2001, descend to flight level 80

P: Descending to flight level 80, KLM 2001 (C: KLM 2001, correct)

C: Cargolux 717, turn left heading 250

P: Turning left heading 250, Cargolux 717 (C: Cargolux 717, correct)

C: Turkish 78..9, turn left heading 165, descend to 3 thousand feet

P: Turning left heading 165, descending to 3 thousand feet, Turkish 789 (C: Turkish 789, correct)

P: SunExpress 936, ILS established runway 07

C: SunExpress 936, (roger) contact Langen Tower at 119,9

P: 119,9 SunExpress 936 bye (C: SunExpress 936, correct)

C: Croatia 007, turn left heading 250

P: Turning left heading 250, Croatia 007 (C: Croatia 007, correct)

C: Turkish 789, turn left heading 100, cleared for ILS approach runway 07, report ILS established

P: Turning left heading 100, cleared for ILS approach runway 07, wilco, Turkish 789 (C: Turkish 789, correct)

C: Croatia 1311, turn left heading 100, descend to 3 thousand feet, cleared for ILS approach runway 07, report ILS established

P: Turning left heading 100, descending to 3 thousand feet, cleared for ILS approach runway 07, Croatia 1311 (C: Croatia 1311, correct, report ILS established)

C: Turkish 399, turn left heading 090, descend to 3 thousand feet, cleared for ILS approach runway 07, report ILS established

P: Turning left heading 090, descending to 3 thousand feet, cleared for ILS approach runway 07, Turkish 399 (C: Turkish 399, correct, report ILS established)

P: Turkish 789, ILS established runway 07

C: Turkish 789, (roger) contact Frankfurt Tower at 119,9

P: 119,9, Turkish 789 (C: Turkish 789, correct)

C: Lufthansa 2 four 6, descend to four thousand feet, QNH 1013

P: Descending to 4 thousad feet, QNH 1013, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: KLM 2 f.. correction, KLM 2001, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, KLM 2001 (C: KLM 2001, correct)

C: Cargolux 717, turn right heading 330, reduce speed (to) 190 knots or less

P: Turning right heading 330, reducing speed 190 knots or less, Cargolux 717 (C: Cargolux 717, correct)

C: Cargolux 717, speed 190 knots

P: Speed 190 knots, Cargolux 717 (C: Cargolux 717, correct)

P: Croatia 1311, ILS established runway 07

C: Croatia 1311, (roger) contact Frankfurt Tower at 119,9

P: 119,9, Croatia 1311, bye (C: Croatia 1311, correct)

C: Cargolux 717, descend to 3 thousand feet

P: Descending to 3 thousand feet, Cargolux 717 (C: Cargolux 717, correct)

C: Lufthansa 2 four 6, turn left heading 160, reduce speed (to) 190 knots

P: Turning left heading 160, reducing speed 190 knots, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: Cargolux 717, turn right heading 050, cleared for ILS approach runway 07, report ILS established

P: Turning right heading 050, cleared for ILS approach runway 07, Cargolux 717 (C: Cargolux 717, correct, report ILS established)

C: Lufthansa 2 four 6, descend to 3 thousand feet

P: Descending to 3 thousand feet, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: Lufthansa 2 four 6, turn left heading 090, cleared for ILS approach runway 07, report ILS established

P: Turning left heading 090, cleared for ILS approach runway 07, wilco, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

P: Turkish 399, ILS established runway 07

C: Turkish 399, (roger) contact Frankfurt Tower at 119,9

P: 119,9, Turkish 399 (C: Turkish 399, correct)

C: KLM 2001, turn left heading 150, descend to four thousand feet

P: Turning left heading 150, descending to 4 thousand feet, KLM 2001 (C: KLM 2001, correct)

C: KLM 2001, reduce speed (to) 190 knots

P: Reducing speed 190 knots, KLM 2001 (C: KLM 2001, correct)

C: KLM 2001, descend to 3 thousand feet

P: Descending to 3 thousand feet, KLM 2001 (C: KLM 2001, correct)

C: Croatia 007, turn right heading 3 four 0, reduce speed (to) 190 knots

P: Turning right heading 340, reducing speed 190 knots, Croatia 007 (C: Croatia 007, correct)

C: KLM 2001, turn left heading 100, cleared for ILS approach runway 07, report ILS established

P: Turning left heading 100, a.. cleared for ILS approach runway 07, wilco, KLM 2001 (C: KLM 2001, correct)

C: Croatia 007, descend to four thousand feet

P: Descending to 4 thousand feet, Croatia 007 (C: Croatia 007, correct)

P: Cargolux 717, ILS established runway 07

C: Cargolux 717, (roger) contact Frankfurt Tower at 119,9

P: 119,9, Cargolux 717, bye (C: Cargolux 717, correct)

C: Croatia 007, reduce speed (to) 160 knots

P: Reducing speed 160 knots, Croatia 007 (C: Croatia 007, correct)

C: Croatia 00 (correction), Croatia 007, turn right heading 0 four 0, to intercept localizer (runway 07)

P: Turning right heading 040 to intercept localizer, Croatia 007 (C: Croatia 007, correct)

P: Lufthansa 246, ILS established runway 07

C: Lufthansa 2 four 6, (roger) contact Frankfurt Tower (on) 119,9

P: 119 9, Lufthansa 246, bye bye (C: Lufthansa 2 fower 6, correct)

C: Croatia 007, descend to 3 thousand feet, cleared for aa appro.. (correction) cleared for ILS approach runway 07, report ILS established

P: Turning right heading 040 a correction, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Croatia 007 (C: Croatia 007, correct)

P: KLM 2001, ILS established runway 07

C: KLM 2001, (roger) contact Frankfurt Tower at 119,9

P: 119,9, KLM 2001, bye (C: KLM 2001, correct)

P: Croatia 007, ILS established runway 07

C: Croatia 007, (roger) contact Frankfurt Tower at 119,9

P: 119,9, Croatia 007 (C: Croatia 007, correct)

Transkript vježbe EXE 3

P: Langen Radar, KLM 662, airborne

C: KLM 662, Langen Radar, identified, on runway heading climb to flight level 250

P: On runway heading climbing to flight level 250, KLM 662 (C: KLM 662, correct)

P: Langen Radar, Lufthansa 424, inbound XINLA, maintaining flight level 220

C: Lufthansa four 2 four, Langen Radar, identified, leave XINLA heading 315, descend to 5 thousand feet, QNH 1013, vectoring for ILS approach runway 07

P: To leave XINLA heading 315, descending to 5 thousand feet, QNH 1013, vectoring for ILS approach runway 07, Lufthansa 424

C: Lufthansa four 2 four, (correct) speed 250 knots or greater

P: 250 knots or greater, Lufthansa 242 (C: Lufthansa fower 2 fower, correct)

P: Langen Radar, Turkish 998, inbound OLALI, maintaining flight level 220

C: Turkish 998, Langen Radar, identified, leave OLALI heading 290, descend to flight level 90, vectoring for ILS approach runway 07

P: To leave OLALI heading 290, descending to flight level 90, vectoring for ILS 07, Turkish 998 (C: Turkish 998, correct)

P: Langen Radar, Croatia 459, inbound SIRPO, maintaining flight level 220

C: Croatia four 49, Langen Radar, identified, leave SIRPO heading 280, descend to flight level 70, vectoring for ILS approach runway 07

P: To leave SIRPO heading 280, descending to flight level 70, vectoring for ILS approach runway 07, Croatia 459 (C: Croatia fower 59, correct)

P: Langen Radar, KLM 1114, inbound XINLA, maintaining flight level 220

C: KLM 111 four, Langen Radar, identified, leave XINLA heading 315, descend to flight level 60, vectoring for ILS approach runway 07

P: To leave XINLA heading 315, descending to flight level 60, vectoring for ILS approach runway 07, KLM 1114

C: KLM 111 four, (correct) speed 250 knots

P: 250 knots KLM 1114 (C: KLM 111 fower, correct)

P: Langen Radar, SunExpress 009, airborne

C: SunExpress 009, Langen Radar, identified, on runway heading climb to flight level 250

P: On runway heading climbing to flight level 250, SunExpress 009 (C: SunExpress 009, correct)

P: Langen Radar, Cargolux 133, inbound COLAS, maintaining flight level 220

C: Cargolux 133, Langen Radar, identified, leave COLAS heading 160, descend to flight level aa.. correction descend to 5 thousand feet, QNH 1013, vectoring for ILS approach runway 07

P: To leave COLAS heading 160, descending to 5 thousand feet, QNH 1013, vectoring for ILS approach runway 07, Cargolux 133 (C: Cargolux 133, correct)

P: Langen Radar, Langen Radar, SunExpress 777, inbound OLALI, maintaining flight level 220

C: SunExpress 777, Langen Radar, identified, leave OLALI heading 290, descend to flight level one zero zero, vectoring for ILS approach runway 07

P: To leave OLALI heading 290, descending to flight level 100, vectoring for ILS approach runway 07, SunExpress 777 (C: SunExpress 777, correct)

P: Langen Radar, Turkish 218, inbound SIRPO, maintaining flight level 220

C: Turkish 218, Langen Radar, identified, leave SIRPO heading 280, descend to flight level 80, vectoring for ILS approach runway 07

P: To leave SIRPO heading 280, descending to flight level 80, vectoring for ILS approach runway 07, Turkish 218 (C: Turkish 218, correct)

C: Cargolux 932, are you airborne

P: a.. Langen Radar, Cargolux 932, airborne

C: Cargolux 932, Langen Radar, identified, on runway heading climb to flight level 250

P: On runway heading climbing to flight level 250, Cargolux 932 (C: Cargolux 932, correct)

P: Langen Radar, Cedar jet 621, inboud COLAS, maintaining flight level 220

C: Cedar jet 621, Langen Radar, identified, leave COLAS heading 160, descend to flight level 60, vectoring for ILS approach runway 07

P: To leave COLAS heading 160, descending to flight level 60, vectoring for ILS approach runway 07, Cedar jet 621 (C: Cedar jet 621, correct)

P: Langen Radar..

C: Turkish, (correction) Turkish 218, r..reduce speed (to) 230 knots

P: Err.. speed 230 knots, Turkish 998

C: (Turkish 998, negative, resume normal speed) Correction Turkish 218, reduce speed (to) 230 knots

P: 230 knots, Turkish 218 (C: Turkish 218, correct)

C: Croatia four 59, reduce speed (to) 230 knots

P: 230 knots a.. Croatia 459 (C: Croatia fower 59, correct)

C: SunExpress 777, reduce speed (to) 230 knots

P: 230 knots, SunExpress 777 (C: SunExpress 777, correct)

C: Turkish 998, reduce speed (to) 230 knots

P: 230 knots, Turkish 998 (C: Turkish 998, correct)

P: Langen Radar, Lufthansa 019, airborne

C: Lufthansa 019, Langen Radar, identified, on runway heading climb to flight level 220

P: On runway heading climbing to flight level 220, Lufthansa 019 (C: Lufthansa 019, correct)

C: Cedar jet 621, reduce speed (to) 230 knots

P: 230 knots, Cedar jet 621 (C: Cedar jet 621, correct)

C: Cargolux 133, reduce speed (to) 230 knots

P: 230 knots, Cargolux 133 (C: Cargolux 133, correct)

C: KLM 662, turn right direct to XINLA

P: Turning right direct to XINLA, a..KLM 662 (C: KLM 662, correct)

C: Lufthansa four 2 four, descend to 3 thousand feet

P: Descending to 3 thousand feet, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

C: KLM 111 four, descend to four thousand feet

P: Descending to 4 thousand feet, KLM 1114

C: (KLM 111 fower, correct) QNH 1013

P: QNH 1013, KLM 1114 (C: KLM 111 fower, correct)

C: SunExpress 009, turn right direct to XINLA

P: Turning right direct to XINLA, SunExpress 009 (C: SunExpress 009, correct)

C: KLM 662, contact Langen Radar at 136,125

P: 136 125, KLM 662 (C: KLM 662, correct)

C: Cargolux 932, turn left direct to RASVO

P: Turning right, correction, turning left direct to RASVO, Cargolux 932 (C: Cargolux 932, correct)

C: SunExpress 009, contact Langen Radar at 136,125

P: 136 125, a.. SunExpress009 (C: SunExpress 009, correct)

C: Lufthansa 019, turn right direct to SIRPO

P: Turning right direct to SIRPO, Lufthansa 019 (C: Lufthansa 019, correct)

C: Cargolux 932, contact Langen Radar at 120,150

P: 12.. a.. 120,150 Cargolux 932..932 (C: Cargolux 932, correct)

C: Lufthansa 019, a..contact Langen Radar at 136,125

P: 136,125, Lufthansa 019 (C: Lufthansa 019, correct)

C: KLM 111 four, r..resume normal speed

P: Normal speed, KLM 1114

C: Lufthansa four 2 four, resume normal speed

P: Normal speed, Lufthansa 424

C: Cargolux 133, correction, Cedar jet 621, reduce speed (to) 210 knots

P: 210 knots a.. Cedar jet 621 (C: Cedar jet 621, correct)

C: Cargolux 133, reduce speed (to) 210 knots

P: Speed 210 knots, Cargolux 133 (C: Cargolux 133, correct)

C: Lufthansa four 2 four, turn right heading 335

P: Turning right heading 335, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

C: Croatia, correction, Turkish 281 reduce speed (to) 210 knots

P: 210 knots, aa.. Turkish 21.. 218 (C: Turkish 218, correct)

C: Croatia four 59, reduce speed (to) 210 knots

P: Reducing speed 210 knots, Croatia 459 (C: Croatia fower 59, correct)

C: Turkish 998, turn left heading 250

P: Turning left heading 250, Turkish 998 (C: Turkish 998, correct)

C: SunExpress 777, reduce speed (to) 210 knots

P: 210 knots, SunExpress 777 (C: SunExpress 777, correct)

C: Turkish 998, reduce speed (to) 210 knots

P: 210 knots, Turkish 998 (C: Turkish 998, correct)

C: Lufthansa four 2 four, turn right heading 0 four 0, cleared for ILS approach runway 07, report ILS established

P: Turning right heading 040, cleared for ILS approach runway 07, wilco, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

C: KLM 11 four, turn right heading 330

P: Turning right heading 330, KLM 1114 (C: KLM 111 fower, correct)

C: KLM 111 four, descend to 3 thousand feet

P: Descending to 3 thousand feet, KLM 1114 (C: KLM 111 fower, correct)

C: Cargolux 133, descend to four thousand feet

P: Descending to 4 thousand feet, Cargolux 133 (C: Cargolux 133, correct)

C: Cedar jet 621, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, Cedar jet 621 (C: Cedar jet 621, correct)

C: KLM, r..reduce speed (to) 190 knots

P: Reducing speed 190 knots, KLM 1114 (C: KLM 111 fower, correct)

C: Cargolux 133, turn left heading 100 to intercept localizer (runway 07)

P: Turning left heading 100 to intercept localizer, Cargolux 133 (C: Cargolux 133, correct)

C: SunExpress 777, turn left heading 250

P: Turning left heading 250, SunExpress 777 (C: SunExpress 777, correct)

C: Croatia four 59, turn left heading 250

P: Turning left heading 250, Croatia 459 (C: Croatia fower 59, correct)

C: KLM 111 four, turn right heading 0 four 0, cleared for ILS approach runway 07, report ILS established

P: Turning right heading 040, cleared for ILS approach runway 07, wilco, KLM 1114 (C: KLM 111 fower, correct)

C: Croatia four 59, descend to a..flight level 60

P: Descending to flight level 60, Croatia 459 (C: Croatia fower 59, correct)

C: Turkish 218, descend to 7 thousand aa.. (correction, descend to) flight level 70

P: Descending to flight level 70, Turkish 218 (C: Turkish 218, correct)

C: Turkish 998, descend to flight level 80

P: Turkish 998, please say again flight level

C: 8z.. (correction) Turkish 998, descend to flight level 80

P: Descending to flight level 80, Turkish 998 (C: Turkish 998, correct)

C: SunExpress 777, descend to flight level 90

P: Descending to flight level 90, Turk.. correction SunExpress 777 (C: SunExpress 777, correct)

P: Lufthansa 424, established on ILS for runway 07

C: Con.. a (correction) Lufthansa four 2 four, (roger) contact a..Langen Tower at 119,9

P: 119,9, Lufthansa 424 (C: Lufthansa fower, 2 fower, correct)

C: Cargolux 133, a..descend to aa.. (correction) descend (to) 3 thousand feet, cleared a.. (correction) cleared for ILS approach runway 07, reduce speed (to) 190 knots or less, (report ILS established)

P: Descending to 3 thousand feet, cleared for ILS approach runway 07, speed 190 knots or less, wilco, Cargolux 133 (C: Cargolux 133, correct)

C: KLM aa (correction), KLM 111 four, resume normal speed

P: Normal speed, KLM 1114

C: Turkish 218, turn left heading 250

P: Turning left heading 250, Turkish 218 (C: Turkish 218, correct)

P: KLM 1114, established on ILS for runway 07

C: KLM 111 four, (roger) contact Langen Tower at a..119,9

P: 119,9, KLM 1114 (C: KLM 111 fower, correct)

C: Cedar jet 621, turn left heading 100, descend to four thousand feet to intercept localizer (runway 07)

P: Turning left heading 100, descending to 4 thousand feet to intercept localizer, Cedar jet 621 (C: Cedar jet 621, correct)

C: Cargolux 133, resume normal speed

P: Normal speed, Cargolux 133

C: Cedar jet 621, cleared fo..a (correction) descend to 3 thousand feet, cleared for ILS approach runway 07, report ILS established

P: Descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Cedar jet 621 (C: Cedar jet 621, correct)

C: Croatia four 59, turn right heading 3 four 0

P: Turning right heading 340, Croatia 459 (C: Croatia fower 59, correct)

C: Croatia four 59, descend to four thousand feet, QNH 1013

P: Descending to 4 thousand feet, QNH 1013, Croatia 459 (C: Croatia fower 59, correct)

C: Turkish 218, descend to 5 thousand feet QNH 1019

P: Descending to 5 thousand feet, QNH 1019, Turkish 218

C: (Turkish 218) Correction, QNH 1013

P: QNH 1013, Turkish 218 (C: Turkish 218, correct)

C: Turkish 998, descend to flight level 60

P: Descending to flight level 60, Turkish 998 (C: Turkish 998, correct)

C: SunExpress 777, descend to flight level 70

P: Descending to flight level 70, SunExpress 777 (C: SunExpress 777, correct)

P: Cargolux 133, established on ILS runway 07

C: Cargolux 133, (roger) contact Langen Tower at 119,9

P: 119,9, Cargolux 133 (C: Cargolux 133, correct)

C: Cedar jet 621, reduce a.. (correction, resume) normal speed

P: Normal speed, Cedar jet 621

C: Croatia four 49, turn right heading 0 four 0, cleared for ILS approach runway 07, descend to 3 thousand feet, report ILS established

P: Turning right heading 040, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Croatia 459 (C: Croatia fower 59, correct)

C: Turkish 218, turn right heading 3 four 0

P: Turning right heading 340, Turkish 218 (C: Turkish 218, correct)

C: Turkish 218, descend to four thousand feet

P: Descending to 4 thousand feet, Turkish 218 (C: Turkish 218, correct)

C: Turkish 998, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, Turkish 998 (C: Turkish 998, correct)

C: SunExpress 777, descend to 6 thousand feet a.. flight (correction, descend to) flight level 60

P: Descending to flight level 60, SunExpress triple 7 (C: SunExpress 777, correct)

C: Croatia four 59, resume normal speed

P: Normal speed, Croatia 459

P: Cedar jet 621, established on for ILS runway 07

C: Cedar jet 621, (roger) contact Frankfurt Tower at 119,9

P: 119,9, Cedar jet 621 (C: Cedar jet 621, correct)

C: Turkish 218, turn right heading 0 four 0, descend to 3 thousand feet, cleared for ILS approach runway 07, a..report ILS established

P: Turning right heading 040, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Croatia 459, correction, Turkish 218

C: Turkish 218, (correct) resume normal speed

P: Normal speed, Turkish 218

C: Turkish 998, turn right headin 3 four 0

P: Turning right heading 340, Turkish 998 (C: Turkish 998, correct)

C: Turkish 998, descend to four thousand feet

P: Descending to 4 thousand feet, Turkish 998 (C: Turkish 998, correct)

C: Turkish 998, resume normal speed

P: Normal speed, Turkish 998

P: Conf..confirm Turkish 218

C: (negative) Turkish 998 (resume normal speed)

P: Normal speed, Turkish 998

C: SunExpress 777, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, SunExpress 777 (C: SunExpress 777, correct)

P: Croatia 459, established on ILS for runway 07

C: Croatia four 59, (roger) contact Frankfurt Tower at 119,9

P: 119,9, Croatia 459 (C: Croatia fower 59, correct)

C: Turkish 998, turn right heading 0 four 0, clea..aa (correction) descend to 3 thousand feet, cleared for ILS approach runway 07 (report ILS established)

P: Turning right heading 040, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Turkish 399 (C: Turkish 998, correct)

C: SunExpress 777, turn right heading 3 four 0

P: Turning right heading 340, SunExpress triple 7 (C: SunExpress 777, correct)

C: SunExpress 777, descend..hh.. (correction) descend to four thousand feet

P: Descending to 4 thousand feet, SunExpress triple 7 (C: SunExpress 777, correct)

C: Turkish 998, reduce speed (to) 180 knots

P: Reducing 180 knots, Turkish 998 (C: Turkish 998, correct)

C: SunExpress 777, turn right heading 0 four 0, descend to 3 thousand feet, cleared for ILS approach runway 07, a.. report ILS established

P: Turning right heading 040, descending to 3 thousand feet, cleared for ILS approach runway 07, SunExpress, wilco, SunExpress 777

C: SunExpress 777, (correct) resume normal speed

P: Normal speed, SunExpress triple 7

P: Turkish 218, established on ILS for runway 07

C: Turkish 218, (roger) contact Frankfurt Tower at 119,9

P: 119,9, Turkish 218 (C: Turkish 218, correct)

C: SunExpress 777, reduce speed to 180 knots

P: Speed 180 knots, SunExpress triple 7 (C: SunExpress 777, correct)

P: Može..

P: SunExpress triple 7, established on ILS for runway 07

C: SunExpress triple 7, contact Frankfurt Tower at 119,9

P: 119,9, SunExpress triple 7 (C: SunExpress 777, correct)

Prilog 2. Transkripti vježbi Studenta 2

Transkript vježbe EXE 1

P: Langen Radar, Turkish 205, maintaining flight level 210

C: Turkish 205, Langen Radar, identified, leave XINLA heading 315, vectoring for ILS approach runway 07

P: To leave XINLA heading 315, vectoring ILS approach runway 07, Turkish 205

C: Turkish 205, correct

P: Langen Radar, Turkish 163, maintaining flight level 220

C: Turkish 163, Langen Radar, identified, expect a.. ILS approach runway 07

P: Turkish 163, roger

P: Langen Radar, Lufthansa 996, maintaining flight level 210

C: Lufthansa 996, Langen Radar, identified, fly heading 275, vectoring (for) ILS approach runway 07

P: Fly heading 275, vectoring ILS approach runway 07, Lufthansa 996 (C: Lufthansa 996, correct)

P: Langen Radar, Lufthansa 476, maintaning flight level 230

C: Lufthansa four 76, Langen Radar, identified, expect ILS approach runway 07

P: A Lufthansa 476, roger

P: Langen Radar, Scandinavian 246, maintaning flight level 210

C: Scandinavian 2 four 6, Langen Radar, identified, leave KERAX heading 2 four 5, vectoring for ILS approach runway 07

P: To leave heading 245, vectoring ILS approach runway 07, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Turkish 2.., (correction) Turkish 205, descend to 3 thousand feet, QNH 1013

P: Descending to 3 thousand feet, QNH 1013, Turkish 205 (C: Turkish 205, correct)

P: Langen Radar, Iberia 882, maintaining flight level 220

C: Iberia 882, Langen Radar, identified, leave COLAS heading 160, vectoring for ILS approach runway 07

P: Leave COLAS heading 160, vectoring ILS approach runway 07, Iberia 882

C: Iberia 882, correct, descend to four thousand feet, QNH 1013

P: Descending to 4 thousand feet, QNH 1013, Iberia 882 (C: Iberia 882, correct)

P: Langen Radar, Scan... SunExpress 118, airborne

C: SunExpress 118, Langen Radar, identified, on runway heading climb (to) flight level 250

P: On runway heading to climb to flight level 250, SunExpress 118 (C: SunExpress 118, correct)

C: Turkish 163, turn left heading 275, (vectoring for ILS approach runway 07)

P: Turning left heading 275, Turkish 163 (C: Turkish 163, correct)

P: Langen Radar, Lufthansa 461, airborne

C: Lufthansa four 61, on runway heading climb (to) flight level 250

P: On runway heading to climb flight level 250, Lufthansa 461 (C: Lufthansa fower 61, correct)

C: Lufthansa four 76, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, Lufthansa 476 (C: Lufthansa fower76, correct)

C: Lufthansa 996, descend to flight level 60

P: Descending to flight level 60, Lufthansa 996 (C: Lufthansa 996, correct)

C: Scandinavian 2 four 6, descend to flight level 70

P: Descending to flight level 70, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Turkish 163, descend to flight level 80

P: Descending to flight level 80, Turkish 163 (C: Turkish 163, correct)

C: Lufthansa 996, a.. fly 230 knots indicated air speed

P: 230 knots, Lufthansa 996 (C: Lufthansa 996, correct)

C: Scandinavian 2 four 6, speed 230 knots

P: 230 knots, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Turkish 163, speed 230 knots

P: 230 knots, Turkish 163 (C: Turkish 163, correct)

C: Lufthansa four 76, turn right (heading) 150, vectoring for ILS approach runway 07

P: Turning right heading 150, vectoring ILS approach runway 07, Lufthansa 476 (C: Lufthansa fower 76, correct)

C: SunExpress 118, turn right direct (to) XINLA

P: Turning right direct XINLA, SunExpress 118 (C: SunExpress 118, correct)

C: Scandinavian 2 four 6, turn right heading 250

P: Turning right heading 250, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Lufthansa four 61, turn left direct (to) RASVO

P: Turning left direct to RASVO, Lufthansa 461 (C: Lufthansa fower 61, correct)

C: Iberia 882, report speed

P: Iberia 882, flying 250 knots

C: Iberia 882, roger, (reduce) speed (to) 230 knots

P: 230 knots, Iberia 882 (C: Iberia 882, correct)

C: Lufthansa four 76, speed 230 knots

P: 230 knots, Lufthansa 476 (C: Lufthansa fower 76, correct)

C: SunExpress 118, contact Langen South (on) 136,125

P: 136,125, SunExpress 118 (C: SunExpress 118, correct)

C: Lufthansa four 61, contact Langen North (on) 120,150

P: 120,150, Lufthansa 461 (C: Lufthansa fower 61, correct)

C: Turkish 205, turn right heading 3 four 0

P: Turning right heading 340, Turkish 205 (C: Turkish 205, correct)

C: Iberia 882, descend (to) 3 thousand feet

P: Descending to 3 thousand feet, Iberia 882 (C: Iberia 882, correct)

C: Turkish 205, turn right heading 0 four 0 , cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, cleared ILS approach runway 07, wilco, Turkish 205 (C: Turkish 205, correct)

C: Turkish 163, turn left heading 250

P: Turning left heading 250, Turkish 163 (C: Turkish 163, correct)

C: Iberia 882, turn left heading 100, cleared for ijl.. (correction, cleared for) ILS approach runway 07, report (ILS) established

P: Turning left heading 100, cleared ILS approach runway 07, wilco, Iberia 882 (C: Iberia 882, correct)

C: Lufthansa four 76, turn left heading 100, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning left heading 100, descending to 3 thousand feet, cleared ILS approach runway 07, wilco, Lufthansa 476 (C: Lufthansa fower 76, correct)

P: Turkish 205, ILS established

C: Turkish 205, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, Turkish 205 (C: Turkish 205, correct)

C: Lufthansa 996, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, Lufthansa 996 (C: Lufthansa 996, correct)

C: Scandinavian 2 four 6, descend to six (correction, descend to) flight level 60

P: Descending to flight level 60, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Turkish 163, descend (to) flight level 70

P: Descending flight level 70, Turkish 163 (C: Turkish 163, correct)

C: Lufthansa 996, speed 230 knots

P: 230 knots, Lufthansa 996 (C: Lufthansa 996, correct)

C: Scandinavian 2 four 6, speed 230 knots

P: Scandinavian 246, speed 230 knots (C: Scandinavian 2 fower 6, correct)

C: Turkish 163, speed 230 knots

P: 230 knots, Turkish 163 (C: Turkish 163, correct)

C: Lufthansa 996, speed 210 knots

P: 210 knots, Lufthansa 996 (C: Lufthansa 996, correct)

C: Scandinavian 2 four 6, speed 210 knots

P: 210 knots, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Turkish 163, speed 210 knots

P: 210 knots, Turkish 163 (C: Turkish 163, correct)

C: Iberia 882, resume normal speed

P: Resuming normal speed, Iberia 882

C: Lufthansa four 76, resume normal speed

P: Resuming normal speed, Lufthansa 476

C: Lufthansa 996, turn right heading 3 four 0, descend to four thousand feet

P: Turning right heading 340, descending to 4 thousand feet, Lufthansa 996 (C: Lufthansa 996, correct)

C: Scandinavian 2 four 6, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Turkish 163, descend to flight level 60

P: Descending to flight level 60, Turkish 163 (C: Turkish 163, correct)

C: Lufthansa 996, turn right heading 0 four 0, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, descending to 3 thousand feet, cleared ILS approach runway 07, wilco, Lufthansa 996 (C: Lufthansa 996, correct)

P: Iberia 882, ILS established

C: Iberia 882, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, Iberia 882 (C: Iberia 882, correct)

C: Scandinavian 2 four 6, descend to four thousand feet

P: Descending to 4 thousand feet, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Turkish 163, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, Turkish 163 (C: Turkish 163, correct)

C: Scandinavian 2 four 6, turn a.. left heading 150

P: Turning left heading 150, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Lufthansa 996, resume normal speed

P: Resuming normal speed, Lufthansa 996

C: Scandinavian 2 four 6, turn left heading 100, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning left heading 100, descending to 3 thousand feet, cleared ILS approach runway 07, wilco, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

P: Lufthansa 476, ILS established

C: Lufthansa four 76, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, Lufthansa 476 (C: Lufthansa fower 76, correct)

C: Turkish 163, turn right heading 3 four 0, descend to four thousand feet

P: Turning right heading 340, descending to 4 thousand feet Turkish 163 (C: Turkish 163, correct)

C: Scandinavian 2 four 6, resume normal speed

P: Normal speed, Scandinavian 246

C: Turkish 163, resume normal speed

P: Normal speed, Turkish 163

P: Lufthansa 996, ILS established

C: Lufthansa 996, (roger), contact Frankfurt Tower (on) 119,9

P: 119,9, Lufthansa 996 (C: Lufthansa 996, correct)

C: Turkish 163, turn right heading 0 four 0, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, descending to 3 thousand feet, cleared ILS approach runway 07, wilco, Turkish 163 (C: Turkish 163, correct)

Transkript vježbe EXE 2

P: Langen Radar, SunExpress 111, inbound OLALI, climbing to flight level 160

C: SunExpress 111, Langen Radar, identified, on runway heading climb to flight level 250

P: On runway heading climbing to flight level 250, SunExpress 111 (C: SunExpress 111, correct)

P: Langen Radar, SunExpress 936, inbound XINLA, maintaining flight level 220

C: SunExpress 936, Langen Radar, identified, fly heading 320, descend to 5 thousand feet, QNH 1013 (vectoring for ILS approach runway 07)

P: Flying heading 320, descending to 5 thousand feet, QNH 1013, SunExpress 936 (C: SunExpress 936, correct)

P: Langen Radar, Turkish 789, inbound KERAX, maintaining flight level 220

C: Turkish 789, Langen Radar, identified, fly heading 2 four 0, descend to flight level 60, vectoring for ILS approach runway 07

P: Flying heading 240, descending to f..six flight level 60, vectoring for ILS approach runway 07, Turkish 789 (C: Turkish 789, correct)

C: SunExpress 936, turn right heading 325, speed 250 knots or greater

P: Turning right heading 325, speed 250 knots or greater, SunExpress 936 (C: SunExpress 936, correct)

P: Lufthansa 246, Langen Radar, inbound TIVNU, maintaining flight level 220

C: Lufthansa 2 four 6, Langen Radar, identified, leave KERAX heading 2 four 5, descend to flight level 70, vectoring for ILS approach runway 07

P: Leave KERAX heading 245, descending to flight level 70, vectoring for ILS approach runway 07, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: Turkish 789, speed 250 knots or greater

P: Speed 250 knots or greater, Turkish 789 (C: Turkish 789, correct)

P: KLM 992, airborne, climbing to flight level 160

C: KLM 992, Langen Radar, identified, on runway heading climb (to) flight level 250

P: On runway heading climbing to flight level 250, KLM 992 (C: KLM 992, correct)

P: Langen Radar, Cargolux 717, inbound SIRPO, maintaining flight level 220

C: Cargolux 717, Langen Radar, identified, leave SIRPO heading 275, descend to flight level 70, vectoring for ILS approach runway 07

P: Leave SIRPO heading 275, descending to flight level 70, vectoring for ILS approach runway 07, a Cargolux 717 (C: Cargolux 717, correct)

P: Langen Radar, Croatia 007, inbound OLALI, maintaining flight level 220

C: Croatia 007, Langen Radar, identified, leave OLALI heading 280, descend to flight level 70, vectoring for ILS approach runway 07

P: Leave OLALI heading 280, descending to flight level 70, vectoring for ILS approach runway 07, Croatia 007 (C: Croatia 007, correct)

C: Cargolux 717, speed 230 knots

P: Speed 230 knots, Cargolux 717 (C: Cargolux 717, correct)

C: Lufthansa 2.. (correction) Lufthansa 2 four 6, speed 230 knots

P: Speed 230 knots, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

P: Langen Radar, Lufthansa 831, airborne, climbing to flight level 100

C: Lufthansa 831, Langen Radar, identified, on runway heading climb (to) flight level 250

P: On runway heading climbing to flight level 250, Lufthansa 831 (C: Lufthansa 831, correct)

P: Langen Radar, Croatia 1311, inbound COLAS, maintaining flight level 220

C: Croatia 1311, Langen Radar, identified, leave COLAS heading 160, descend to flight level 80, vectoring for ILS approach runway 07

P: Leave COLAS heading 160, descending to flight level 80, vectoring for ILS approach runway 07, Croatia 1311 (C: Croatia 1311, correct)

C: Croatia 007, turn left heading 275, speed 230 knots

P: Turning left heading 275, speed 230 knots, Croatia 007 (C: Croatia 007, correct)

P: Langen Radar, Turkish 399, inbound a.. PIPEP, maintaining flight level 220

C: Turkish 399, Langen Radar, identified, a.. descend to flight level 90, expect (ILS approach) runway 07

P: Descending to flight level 90, roger, Turkish 399

C: Turkish 399, (correct) speed 230 knots

P: Reducing speed 230 knots, Turkish 399 (C: Turkish 399, correct)

C: Croatia 1311, speed 230 knots

P: Reducing speed 230 knots, Croatia 1311 (C: Croatia 1311, correct)

P: Langen Radar, KLM 2001, inbound KERAX, maintaining flight level 220

C: KLM 2001, Langen Radar, identified, leave KERAX heading 2 four 5, descend to flight level 80, vectoring for ILS approach runway 07

P: Flying heading 245, descending to flight level 80, KLM, vectoring for ILS approach runway 07, KLM 2001 (C: KLM 2001, correct)

C: SunExpress 111, cleared direct XINLA, a correction, cleared direct (to) OLALI

P: Cleared direct OLALI, SunExpress 111 (C: SunExpress 111, correct)

C: SunExpress 936, descend to 3 thousand feet

P: Descending to 3 thousand feet, a.. SunExpress 936 (C: SunExpress 936, correct)

C: Turkish 789, descend to four thousand feet, QNH 1013

P: Descending to 4 thousand feet, QNH 1013, Turkish 789 (C: Turkish 789, correct)

C: KLM 2001, speed 230 knots

P: Reducing speed 230 knots, KLM 2001 (C: KLM 2001, correct)

C: KLM 992, cleared direct (to) OLALI

P: Cleared direct OLALI, KLM 992 (C: KLM 992, correct)

C: Croatia 1311, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, Croatia 1311 (C: Croatia 1311, correct)

C: Turkish 399, descend to flight level 60

P: Descending to flight level 60, Turkish 399 (C: Turkish 399, correct)

C: SunExpress 111, contact Langen Rad.. (correction, contact) Langen Radar (on) 136,125

P: 136 125, SunExpress 111 (C: SunExpress 111, correct)

C: KLM 992, contact Langen Radar (on) 136,125

P: 136,125, KLM 992 (C: KLM 992, correct)

C: Lufthansa 831, turn left direct (to) RASVO

P: Turning left direct to RASVO, Lufthansa 831 (C: Lufthansa 831, correct)

C: Lufthansa 831, contact Langen Radar (on) 120,150

P: 120,150, Lufthansa 831 (C: Lufthansa 831, correct)

C: Turkish 789, turn right heading 250

P: Turning right heading 250, Turkish 789 (C: Turkish 789, correct)

C: Turkish 399, turn right heading 1 four 5, vectoring for ILS approach runway 07

P: Turning right heading 145, vectoring for ILS approach runway 07, Turkish 399 (C: Turkish 399, correct)

C: SunExpress 936, speed 230 knots

P: Reducing speed 230 knots, SunExpress 936 (C: SunExpress 936, correct)

C: KLM 2001, speed 210 knots

P: Reducing speed 210 knots, KLM 2001 (C: KLM 2001, correct)

C: Lufthansa 2 four spi..6, (correction, Lufthansa 2 fower 6) speed 210 knots

P: Reducing speed 210 knots, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: Croatia 007, speed 210 knots

P: Reducing speed 210 knots, Croatia 007 (C: Croatia 007, correct)

C: Cargolux 717, speed 210 knots

P: Reducing speed 210 knots, Cargolux 717 (C: Cargolux 717, correct)

C: Croatia 1311, speed 210 knots

P: Reducing speed 210 knots, Croatia 1311 (C: Croatia 1311, correct)

C: Turkish 399, speed 210 knots

P: Turkish 210 knots, Turkish 399 (C: Turkish 399, correct)

C: SunExpress 936, speed 210 knots

P: Reducing speed 210 knots, SunExpress 936 (C: SunExpress 936, correct)

C: Turkish 789, speed 230 knots

P: Reducing speed 230 knots, Turkish 789 (C: Turkish 789, correct)

C: SunExpress 936, turn right heading 0 four 0, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, cleared for ILS approach runway 07, wilco, SunExpress 936

C: SunExpress 936, correct, resume normal speed

P: SunExpress 936, wilco

C: Turkish 789, descend to 3 thousand feet

P: Descending to 3 thousand feet, Turkish 789 (C: Turkish 789, correct)

C: Croatia 1311, descend to four thousand feet

P: Descending to 4 thousand feet, Croatia 1311 (C: Croatia 1311, correct)

C: Turkish 399, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, Turkish 399 (C: Turkish 399, correct)

C: Cargolux 717, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, Cargolux 717 (C: Cargolux 717, correct)

C: Lufthansa 2 four 6, descend to flight level 60

P: Descending to flight level 60, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

P: SunExpress 936, ILS established runway 07

C: SunExpress 936, (roger) contact Frankfurt Tower (on) 119,9

P: 119,9, SunExpress 936 (C: SunExpress 936, correct)

C: Turkish 789, turn left heading 180

P: Turning left heading 180, Turkish 789 (C: Turkish 789, correct)

C: Lufthansa 2 four 6, turn right heading 250

P: Turning right heading 250, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: KLM 2001, turn left heading 250... correction turn right heading 250

P: Turning right heading 250, KLM 2001 (C: KLM 2001, correct)

C: Turkish 789, turn left heading 100, cleared for ILS approach runway 07, report (ILS) established

P: Turning left heading 100, cleared for ILS approach runway 07, wilco, Turkish 789

C: Turkish 789, correct, resume normal speed

P: Turkish 789, err.. wilco

C: Croatia 1311, turn left heading 100, cleared for ILS approach runway 07, descend to 3 thousand feet (report ILS established)

P: Turning left heading 100, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Croatia 1311 (C: Croatia 1311, correct)

C: Turkish 399, turn left heading 100, descend to 3 thousand feet, cleared for ILS approach runway 07 (report ILS established)

P: Turning left heading 100, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Turkish 399 (C: Turkish 399, correct)

C: Lufthansa 2 four 6, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: Cargolux 717, descend to four thousand feet

P: Descending to 4 thousand feet, Cargolux 717 (C: Cargolux 717, correct)

P: Turkish 78..9 fully established runway 07

C: Turkish 789, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, Turkish 789 (C: Turkish 789, correct)

C: Croatia 007, turn left heading 250, descend to 5 thousand feet, QNH 1013

P: Turning left heading 250, descending to 5 thousand feet, QNH 1013, Croatia 007 (C: Croatia 007, correct)

C: Cargolux 717, turn right heading 3 four 0

P: Turning right heading 340, Cargolux 717 (C: Cargolux 717, correct)

C: Croatia 1311, resume normal speed

P: Croatia 1311, wilco

C: Turkish 399, resume normal speed

P: Turkish 399, wilco

C: Cargolux 717, speed 190 knots

P: Reducing speed 190 knots, Cargolux 717 (C: Cargolux 717, correct)

C: KLM 2001, descend to 6 thousand, correction, descend to flight level 60

P: Descending to flight level 60, KLM 2001 (C: KLM 2001, correct)

P: Croatia 1311, aa.. established on ILS runway 07

C: Cargolux 717, turn right heading 0 four 0, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Cargolux 717 (C: Cargolux 717, correct)

C: Croatia 1311, (roger) contact Fankfurt Tower (on) 119,9

P: 119,9, Croatia 1311 (C: Croatia 1311, correct)

C: Cargolux 717, resume normal speed

P: Cargolux 717, wilco, normal speed

C: Lufthansa 2 four 6, turn left heading 150, descend to 3 thousand feet

P: Turning left heading 150, descending to 3 thousand feet, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

P: Turkish 399, a ILS established runway 07

C: Turkish 399, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, Turkish 399, thank you bye (C: Turkish 399, correct)

C: Lutfhansa 2 four 6, turn left heading 100, cleared for ILS approach runway 07, report (ILS) established

P: Turning left heading 100, cleared for ILS approach runway 07, wilco, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: KLM 2001, descend to four thousand feet, QNH 1013

P: Descending to 4 thousand feet, QNH 1013, KLM 2001 (C: KLM 2001, correct)

C: KLM 2001, turn left heading 150, descend to 3 thousand feet

P: Turning left heading 150, descending to 3 thousand feet, KLM 2001 (C: KLM 2001, correct)

C: Croatia 007, descend to four thousand feet

P: Descending to 4 thousand feet Croatia 007 (C: Croatia 007, correct)

C: Croatia 007, turn right heading 290

P: Turning right heading 290, Croatia 007 (C: Croatia 007, correct)

C: KLM 2001, turn left heading 100, cleared for ILS approach runway 07, report (ILS) established

P: Turning left heading 100, cleared for ILS approach runway 07, wilco, KLM 2001 (C: KLM 2001, correct)

P: Cargolux 717, ILS established runway 07

C: Cargolux 717, roger, contact Frankfurt Tower (on) 119,9

P: 119, a..9, Cargolux 717 (C: Cargolux 717, correct)

C: KLM 2001, turn left heading 090, still cleared for ILS approach runway 07

P: Turning left heading 090, roger, KLM 2001 (C: KLM 2001, correct)

C: Lufthansa 2 four 6, resume normal speed

P: Lufthansa 246, a wilco, normal speed

C: Croatia 007, turn right heading 0 four 0, descend to 3 thousand feet to intercept localizer runway 07

P: Turning right heading 040, descending to 3 thousand feet to intercept localizer runway 07, Croatia 007

C: Croatia 007, (correct) cleared for ILS approach runway 07, report (ILS) established

P: Cleared for ILS approach runway 07, wilco, Croatia 007 (C: Croatia 007, correct)

P: Lufthansa 246, ILS established runway 07

C: Lufthansa 2 four 6, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: Croatia 007, resume normal speed

P: Croatia 007, wilco

Transkript vježbe EXE 3

P: Langen Radar, KLM 662, airborne

C: KLM 662, Langen Radar, identified, on runway heading climb (to) flight level 250

P: On runway heading climbing flight level 250, KLM 662 (C: KLM 662, correct)

P: Langen Radar, Lufthansa 424, maintaining flight level 220

C: Lufthansa four 2 four, Langen Radar, identified, fly heading 325, descend to 5 thousand feet QNH 1013, a.. vectoring for ILS approach runway 07

P: To fly heading 325, descending 5 thousand feet, QNH 1013, vectoring ILS approach runway 07, Lufthansa 424

C: Lufthansa four 2 four, correct, speed 250 knots or greater

P: Speed 250 knots or greater, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

P: Langen Radar, Turkish 998, maintaining flight level 220

C: Turkish 998, Langen Radar, identified, leave OLALI heading 280, descend to flight level 60, vectoring for ILS approach runway 07

P: To leave OLALI heading 280, descending flight level 60, vectoring ILS approach runway 07, Turkish 998

C: Turkish 998, correct, speed 230 knots

P: 230 knots, Turkish 998 (C: Turkish 998, correct)

P: Langen Radar, Croatia 459, maintaining flight level 220

C: Croatia four 59, Langen Radar, identified, leave SIRPO heading 280, descend to flight level 70, vectoring for ILS approach runway 07

P: To leave SIRPO heading 280, descending flight level 70, vectoring ILS approach runway 07, Croatia 459 (C: Croatia fower 59, correct)

P: Langen Radar, Cargolux 133, maintaining flight level 220

C: Cargolux 133, Langen Radar, identified, leave COLAS heading 160, descend to flight level 60, vectoring for ILS approach runway 07

P: To leave COLAS heading 160, descending flight level 60, vectoring ILS approach runway 07, Cargolux 133 (C: Cargolux 133, correct)

P: Langen radar, SunExpress 009, airborne

C: SunExpress 009, Langen Radar, identified, on runway heading climb (to) flight level 250

P: On runway heading climbing flight level 250, SunExpress 009 (C: SunExpress 009, correct)

C: Croatia four 59, speed 230 knots

P: 230 knots, Croatia 459 (C: Croatia fower 59, correct)

P: Langen Radar, KLM 1114, maintining flight level 220

C: KLM 111 four, Langen Radar, identified, fly heading 320, descend to flight level 60, vectoring for ILS approach runway 07

P: Fly heading 320, descending flight level 60, vectoring ILS approach runway 07, KLM 1114

C: KLM 111 four, correct, speed 250 knots

P: 250 knots, KLM 1114 (C: KLM 111 fower, correct)

P: Langen Radar, Cargolux 932, airborne

C: Cargolux 932, Langen Radar, identified, turn a.. left heading 360, climb (to) flight level 250

P: Turning left heading 360, climbing flight level 220, Cargolux 932

C: Cargolux 932, (negative) climb (to) flight level 250

P: Climbing flight level 250, Cargolux 932 (C: Cargolux 932, correct)

P: Langen Radar, Turkish 218, maintaining flight level 220

C: Turkish 218, Langen Radar, identified, fly heading 280, descend to flight level 70, vectoring for ILS approach runway 07

P: Fly heading 280, descending flight level 70, vectoring ILS approach runway 07, Turkish 218

C: Turkish 218, correct, speed 230 knots

P: 230 knots, Turkish 218 (C: Turkish 218, correct)

P: Langen Radar, SunExpress 777, maintaining flight level 220

C: SunExpress 777, Langen Radar, identified, fly heading 280, descend to flight level 80, vectoring for ILS approach runway 07

P: Fly heading 280, descending flight level 80, vectoring ILS approach runway 07, SunExpress 777

C: SunExpress 777, correct, speed 230 knots

P: 230 knots, SunExpress 777 (C: SunExpress 777, correct)

P: Langen Radar, Cedar jet 621, maintaining flight level 220

C: Cedar jet 621, Langen Radar, identified, leave COLAS heading 165, descend to flight level 70, vectoring for ILS approach runway 07

P: To leave COLAS heading 165, descending flight level 70, vectoring ILS approach runway 07, Cedar jet 621 (C: Cedar jet 621, correct)

P: Langen Radar, Lufthansa 9..airborne, correction 019, airborne

C: Lufthansa 019, Langen Radar, identified, on runway heading climb (to) flight level 250

P: On runway heading climbing flight level 250, Lufthansa 019

C: Lufthansa 019, confirm a.. requested level is 250

P: Lufthansa 019, a..requested level 220

C: Lufthansa 019, a..roger, (recleared) climb (to) flight level 220

P: Climbing flight level 220, Lufthansa 019 (C: Lufthansa 019, correct)

C: KLM 662, turn right direct (to) XINLA

P: Turning right direct XINLA, KLM 662 (C: KLM 662, correct)

C: Cargolux 133, speed 250 knots

P: 250 knots, Cargolux 133 (C: Cargolux 133, correct)

C: Cedar jet 621, speed 250 knots

P: 250 knots, Cedar jet 621 (C: Cedar jet 621, correct)

C: Croatia four 59, speed 210 knots

P: 210 knots, Croatia 459 (C: Croatia fower 59, correct)

C: Turkish 218, speed 210 knots

P: 210 knots, Turkish 218 (C: Turkish 218, correct)

C: Turkish 998, speed 210 knots

P: 210 knots, Turkish 998 (C: Turkish 998, correct)

C: SunExpress 777, speed 210 knots

P: 210 knots, SunExpress 777 (C: SunExpress 777, correct)

C: Lufthansa four 2 four, descend to 3 thousand feet

P: Descending 3 thousand feet, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

C: KLM 111 four, descend to four thousand feet, QNH 1013

P: Descending 4 thousand feet, QNH 1013, KLM 1114 (C: KLM 111 fower, correct)

C: SunExpress 009, turn right direct (to) XINLA

P: Turning right direct XINLA, SunExpress 009 (C: SunExpress 009, correct)

C: Cargolux 932, turn left direct (to) RASVO

P: Turning left direct RASVO, Cargolux 932 (C: Cargolux 932, correct)

C: KLM 662, contact Langen Radar (on) 136,125

P: 136,125, KLM 662 (C: KLM 662, correct)

C: SunExpress 009, contact Langen Radar (on) 136,125

P: 136,125, SunExpress 009 (C: SunExpress 009, correct)

C: Cargolux 932, contact Langen Radar (on) 120,150

P: 120,150, Cargolux 932 (C: Cargolux 932, correct)

C: Lufthansa 019, turn right direct (to) SIRPO

P: Turning right direct SIRPO, Lufthansa 019 (C: Lufthansa 019, correct)

C: Lufthansa four 2 four, speed 230 knots

P: 230 knots, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

C: KLM 111 four, speed 230 knots

P: 230 knots, KLM 1114 (C: KLM 111 fower, correct)

C: Cargolux 133, speed 230 knots

P: 230 knots, Cargolux 133 (C: Cargolux 133, correct)

C: Cedar jet 621, speed 230 knots

P: 230 knots, Cedar jet 621 (C: Cedar jet 621, correct)

C: Cargolux 133, descend to 5 thousand feet, QNH 1013

P: Descending 5 thousand feet, QNH 1013, Cargolux 133 (C: Cargolux 133, correct)

C: Cedar jet 621, descend to flight level 60

P: Descending flight level 60, Cedar jet 621 (C: Cedar jet 621, correct)

C: Lufthansa 019, contact Langen Radar (on) 136,125

P: 136,125, Lufthansa 019 (C: Lufthansa 019, correct)

C: SunExpress 777, descend (to) flight level 70

P: Descending flight level 70, SunExpress 777 (C: SunExpress 777, correct)

C: Lufthansa four 2 four, speed 210 knots

P: 210 knots, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

C: KLM 111 four, speed 210 knots

P: 210 knots, KLM 1114 (C: KLM 111 fower, correct)

C: Cargolux 133, speed 210 knots

P: 210 knots, Cargolux 133 (C: Cargolux 133, correct)

C: Cedar jet 621, speed 210 knots

P: 210 knots, Cedar jet 621 (C: Cedar jet 621, correct)

C: Cedar jet 621, descend to 5 thousand feet, QNH 1013

P: Descending 5 thousand feet, QNH 1013, Cedar jet 621 (C: Cedar jet 621, correct)

C: Lufthansa four 2 four, turn right heading 0 four 0, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, cleared ILS approach runway 07, wilco, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

C: KLM 111 four, descend to 3 thousand feet

P: Descending 3 thousand feet, KLM 1114 (C: KLM 111 fower, correct)

C: Cargolux 133, descend to four thousand feet

P: Descending 4 thousand feet, Cargolux 133 (C: Cargolux 133, correct)

C: Cedar jet 621, descend to four thousand feet

P: Descending 4 thousand feet, Cedar jet 621 (C: Cedar jet 621, correct)

C: Croatia four 59, descend to 5 thousand feet, QNH 1013

P: Descending 5 thousand feet, QNH 1013, Croatia 459 (C: Croatia fower 59, correct)

C: Turkish 218, descend to flight level 60

P: Descending flight level 60, Turkish 218 (C: Turkish 218, correct)

P: Lufthansa 424, ILS established runway 07

C: Lufthansa four 2 four, (roger) contact Frankfurt Tower (on) 119,9

P: 119,9, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

C: KLM 111 four, turn right heading 0 four 0, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, cleared ILS approach runway 07, wilco, KLM 1114 (C: KLM 111 fower, correct)

C: Cargolux 133, turn left heading 100, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning left heading 100, descending 3 thousand feet, cleared ILS approach runway 07, wilco, Cargolux 133 (C: Cargolux 133, correct)

C: Turkish 998, turn left heading 250

P: Turning left heading 250, Turkish 998 (C: Turkish 998, correct)

C: SunExpress 777, turn left heading 250

P: Turning left heading 250, SunExpress 777 (C: SunExpress 777, correct)

C: Croatia four 59, turn left heading 250

P: Turning left heading 250, Croatia 459 (C: Croatia fower 59, correct)

C: Cedar jet 621, turn left heading 100, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning left heading 100, descending 3 thousand feet, cleared ILS approach runway 07, wilco, Cedar jet 621 (C: Cedar jet 621, correct)

P: KLM 1114, ILS established runway 07

C: KLM 111 four, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, KLM 1114 (C: KLM 111 fower, correct)

C: Croatia four 59, descend to four thousand feet

P: Descending 4 thousand feet, Croatia 459 (C: Croatia fower 59, correct)

C: Turkish 218, descend to 5 thousand feet, QNH 1013

P: Descending 5 thousand feet, QNH 1013, Turkish 218 (C: Turkish 218, correct)

C: Croatia four 59, turn right heading 280

P: Turning right heading 280, Croatia 459 (C: Croatia fower 59, correct)

C: Turkish 218, turn left heading 250

P: Turning left heading 250, Turkish 218 (C: Turkish 218, correct)

C: Turkish 998, turn right heading 270

P: Turning right heading 270, Turkish 998 (C: Turkish 998, correct)

P: Cargolux 133, ILS established runway 07

C: Cargolux 133, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, Cargolux 133 (C: Cargolux 133, correct)

C: Croatia four 59, turn right heading 3 four 0

P: Turning right heading 340, Croatia 459 (C: Croatia fower 59, correct)

C: Turkish 218, turn right heading 290

P: Turning right heading 290, Turkish 218 (C: Turkish 218, correct)

C: Croatia four 59, turn right heading 0 four 0, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, descending 3 thousand feet, cleared ILS approach runway 07, wilco, Croatia 459 (C: Croatia fower 59, correct)

C: SunExpress 777, turn right heading 270

P: Turning right heading 270, SunExpress 777 (C: SunExpress 777, correct)

C: Turkish 218, turn right heading 3 four 0, descend to .. four thousand feet

P: Turning right heading 340, descending to 4 thousand feet, Turkish 218 (C: Turkish 218, correct)

P: Cedar jet 621, ILS established on runway 07

C: Cedar jet 621, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, Cedar jet 621 (C: Cedar jet 621, correct)

C: Turkish 218, turn right heading 0 four 0, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, descending 3 thousand feet, cleared ILS approach runway 07, wilco, Turkish 218 (C: Turkish 218, correct)

C: Turkish 998, descend to 5 thousand feet, QNH 1013

P: Descending 5 thousand feet, QNH 1013, Turkish 998 (C: Turkish 998, correct)

C: SunExpress 777, descend to flight level 60

P: Descending flight level 60, SunExpress 777 (C: SunExpress 777, correct)

P: Croatia 459, ILS established runway 07

C: Croatia four 59, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, Croatia 459 (C: Croatia fower 59, correct)

C: Turkish 998, turn right heading 3 four 0, descend to 3 thousand feet

P: Turning right heading 340, descending 3 thousand feet, Turkish 998 (C: Turkish 998, correct)

C: Turkish 998, a..turn right heading 0 four 0, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, cleared ILS approach runway 07, wilco, Turkish 998 (C: Turkish 998, correct)

C: SunExpress 777, turn right heading 3 four 0, descend to 5 thousand feet, QNH 1013

P: Turning right heading 340, descending 5 thousand feet, QNH 1013, SunExpress 777 (C: SunExpress 777, correct)

P: Turkish 218, ILS established for runway 07

C: Turkish 218, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, Turkish 218 (C: Turkish 218, correct)

C: SunExpress 777, speed 190 knots

P: 190 knots, SunExpress 777 (C: SunExpress 777, correct)

C: SunExpress 777, turn right heading 0 four 0, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, descending 3 thousand feet, cleared ILS approach runway 07, wilco, SunExpress 777 (C: SunExpress 777, correct)

C: SunExpress 777, contact Frankfurt Tower (on) 119,9

P: 119,9 SunExpress 777 (C: SunExpress 777, correct)

Prilog 3. Transkripti vježbi Studenta 3

Transkript vježbe EXE 1

P: Langen Radar, tu.. Turkish 163, inbound OLALI, maintaining flight level 220

C: Turkish 163, Langen Radar, identified, leave OLALI heading 275, descend to flight level 110, vectoring for ILS approach runway 07

P: To leave OLALI a heading 275, a please repeat level, Turkish 163

C: (Turkish 163) Descend to flight level 110

P: Descending to flight level 110, Turkish 163 (C: Turkish 163, correct)

P: Langen Radar, Lufhansa 996, inbound ss..SIRPO

C: Lufthansa 996, Langen Radar, identified, leave SIRPO heading 280, descend to flight level one zero zero, vectoring for ILS approach runway 07

P: To leave a SIRPO heading 280, descend to flight level 100, Lufthansa 996 (C: Lufthansa 996, correct, vectoring for ILS approach runway 07)

P: Turkish, Langen Radar Tu..Turkish 205, inbound XINLA, maintaining flight level 210

C: Turkish 205, Langen Radar, identified, leave XINLA heading 315, descend to flight level 60, vectoring for ILS approach runway 07

P: To leave XINLA heading 315, a descend to flight level 60, roger, a Turkish 205 (C: Turkish 205, correct, vectoring for ILS approach runway 07)

P: Langen Radar, Scandinavian 246, inbound KERAX, maintaining flight level 210

C: Scandinavian 2 fower 6, Langen Radar, identified, leave KERAX a heading 2 fower 5, descend to flight level 90 (vectoring for ILS approach runway 07)

P: To leave KERAX heading 245, descending to flight level 90, a Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

P: Langen Radar, Iberia 882, inbound COLAS, maintaining flight level 220

C: Iberia 882, Langen Radar, identified, leave COLAS heading 150, descend to flight level 70, vectoring for ILS approach runway 07

P: To leave COLAS heading 150, descending to flight level 70, vectoring for ILS approach runway 07, Iberia 882 (C: Iberia 882, correct)

P: SunExpress 1, Langen Radar, SunExpress 118, airborne

C: SunExpress 118, Langen Radar, identified, on runway heading climb to flight level 250

P: Langen Radar, Lufthansa 476, inbound RAS.. a.. passing RASVO, maintaining flight level 230

C: Lufthansa fower 76, Langen Radar, identified, descend to flight level 80, expect ILS approach runway 07

P: Descending to flight level 80, roger, Lufthansa 476 (C: Lufthansa fower 76, correct)

P: Langen Radar, Lufthansa 461, a.. airborne

C: Lufthansa fower 61, Langen Radar, identified, on runway heading climb to flight level 2 fower 0

P: On runway heading a.. climb to flight level 240, Lufthansa 461

C: Lufthansa fower 61, recleared, climb to flight level 250

P: Climbing to flight level 250, Lufthansa 461 (C: Lufthansa fower 61, correct)

C: Iberia 882, turn right heading 155, reduce speed to 230 knots

P: Turning right heading 155, reducing speed to 230 knots, Iberia 882 (C: Iberia 882, correct)

C: Turkish 205, descend to 3 thousand feet, QNH 1013

P: Descending to 3 thousand feet, QNH 1013, Turkish 205 (C: Turkish 205, correct)

C: Iberia 882, descend to fower thousand feet, QNH 1013

P: Descending to 4 thousand feet, QNH 1013, Iberia 882 (C: Iberia 882, correct)

C: Lufthansa fower 76, descend to 5 thousand feet, QNH 1013

P: Descending to 5 thousand feet, QNH 1013, Lufthansa 476 (C: Lufthansa fower 76, correct)

C: SunExpress 118, a.. turn left direct to, correction, turn right direct to XINLA

P: Turning right direct to kss.. XINLA, SunExpress 118 (C: SunExpress 118, correct)

C: Lufthansa fower 61, turn left direct to RASVO

P: Turning left direct to RASVO, Lufthansa 461 (C: Lufthansa fower 61, correct)

C: Scandinavian 2 fower 6, reduce speed to 230 knots

P: Reducing speed to 230 knots, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Turkish 163, reduce speed to 230 knots

P: Reducing speed to 230 knots, Turkish 163 (C: Turkish 163, correct)

C: Lufthansa 996, reduce speed to 230 knots

P: Reducing speed to 230 knots, Lufthansa 996 (C: Lufthansa 996, correct)

C: Lufthansa fower 63, reduce speed to 230 knots, correction, Lufthansa fower 76, reduce speed to 230 knots

P: Reducing speed to 230 knots, Lufthansa 476 (C: Lufthansa fower 76, correct)

C: Iberia 882, reduce speed to 210 knots

P: Reducing speed to 210 knots, Iberia 882 (C: Iberia 882, correct)

C: Lufthansa fower 61, contact Langen Radar on 120,150

P: 120,150, Lufthansa 461 (C: Lufthansa fower 61, correct)

C: SunExpress 118, contact Langen Radar on 136,125

P: 136,125, SunExpress 118 (C: SunExpress 118, correct)

C: Scandinavian 2 fower 6, turn right heading 250, descend to flight level 60

P: Turning right heading 250, descending to flight level 60, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Lufthansa 996, descend to flight level 70

P: Descending to flight level 70, Lufthansa 996 (C: Lufthansa 996, correct)

C: Turkish 163, descend to flight level 80

P: Descending to flight level 80, Turkish 163 (C: Turkish 163, correct)

C: Lufthansa fower si.., correction, Lufthansa fower 76, turn left heading 1 fower 0 (vectoring for ILS approach runway 07)

P: Turning left heading 140, Lufthansa 476 (C: Lufthansa fower 76, correct)

C: Turkish 205, turn right heading 0 fower 0, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, cleared for ILS approach runway 07, roger, wilco, Turkish 205 (C: Turkish 205, correct)

C: Lufthansa fower 76, turn left heading 100 to intercept localizer (runway 07)

P: Turning left heading 100 to intercept localizer, Lufthansa 476 (C: Lufthansa fower 76, correct)

C: Iberia 882, turn left heading 100, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning left heading 100, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco Iberia 882 (C: Iberia 882, correct)

C: Lufthansa fower 76, turn left heading 0 fower 0, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning left heading 040, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Lufthansa 476 (C: Lufthansa fower 76, correct)

P: Turkish 205, ILS established

C: Turkish 205, (roger), contact Frankfurt Tower (on) 119,9

P: 119,9 Turkish 205 (C: Turkish 205, correct)

C: Lufthansa 996, descend to fower thousand feet, QNH 1013

P: Descending to 4 thousand feet, QNH 1013, Lufthansa 996 (C: Lufthansa 996, correct)

C: Lufthansa 996, reduce speed to 210 knots

P: Reducing speed to 210 knots, Lufthansa 996 (C: Lufthansa 996, correct)

C: Turkish 163, turn a.. left heading 255, descend to 5 thousand feet, QNH 1013

P: Turning left heading 255, descending to 5 thousand feet, QNH 1013, Turkish 163 (C: Turkish 163, correct)

P: Iberia 882, ILS fully established

C: Turkish 996, turn right heading, correction, Lufthansa 996, turn right heading 0 fower 0, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Lufthansa 996 (C: Lufthansa 996, correct)

C: Iberia 882, (roger), contact Frankfurt Tower (on) 119,9

P: 119,9, Iberia 882 (C: Iberia 882, correct)

C: Scandinavian 2 fower 6, turn left heading 150, descend to fower thousand feet, QNH 1013

P: Turning left heading 150, descending to a 4 thousand feet, QNH 1013, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

P: Lufthansa 4 si.. 76, ILS fully established

C: Lufthansa fower 76, (roger), contact Frankfurt Tower (on) 119,9

P: 119,9, Lufthansa 476 (C: Lufthansa fower 76, correct)

C: Scandinavian 2 fower 6, reduce speed to 210 knots

P: Reducing speed to 210 knots, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Turkish 163, reduce speed to 210 knots

P: Reducing speed to 210 knots, Turkish 163 (C: Turkish 163, correct)

C: Scandinavian 2 fower 6, turn left heading 100, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning left heading 100, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

C: Turkish 163, turn right heading 000 360, correction, (turn right heading) 360, descend to 3 thousand feet

P: Turning right heading 360, descending to 3 thousand feet, Turkish 163 (C: Turkish 163, correct)

C: Turkish 163, turn right heading 0 fower 0, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, cleared for ILS approach runway 07, wilco, Turkish 163 (C: Turkish 163, correct)

P: Lufthansa 996, ILS fully established

C: Lufthansa 996, roger, contact Frankfurt Tower on 119,9

P: 119,9, Lufthansa 996 (C: Lufthansa 996, correct)

P: Scandinavian 246, ILS fully established

C: Scandinavian 2 fower 6, roger, contact Frankfurt Tower on 119,9

P: 119,9, Scandinavian 246 (C: Scandinavian 2 fower 6, correct)

P: Turkish 163, ILS fully established

C: Turkish 163, (roger), contact Frankfurt Tower on 11 najnje.. (correction, contact Frankfurt Tower) (on) 119,9

P: 119,9, Turkish 163, bye bye

C: bye (Turkish 163, correct)

Transkript vježbe EXE 2

P: Langen Radar, SunExpress 111, airborne

C: SunExprekss 111, Langen Radar, identified, on runway heading climb to flight level 250

P: On runway heading climbing to flight level 250, SunExpress 111 (C: SunExpress 111, correct)

P: Langen Radar, Turkish 789, inbound KERAX, maintaining flight level 220

C: Turkish 789, Langen Radar, identified, fly heading 2 fower 0, descend to fower thousand feet, QNH 1016

P: Flying heading 240, descending to 4 thousand feet, QNH 1016, Turkish 789

C: Turkish 789, (correct) speed 250 knots or greater (vectoring for ILS approach runway 07)

P: 250 knots or greater, Turkish 789 (C: Turkish 789, correct)

P: SunExpress 93ss.., correction, Langen Radar, SunExpress 936, inbound XINLA, maintaining flight level 220

C: SunExprekss 936, Langen Radar, identified, leave XINLA heading 315, descend to fower thousand feet, (QNH) vectoring for ILS (approach) runway 07

P: Leaving XINLA heading 315, descending to 4 thousand feet, SunExpress 936

C: SunExprekss 936, (correct) speed 250 knots or greater

P: 250 knots or greater, SunExpress 936 (C: SunExpress 936, correct)

P: Langen Radar, KLM 992, airborne

C: KLM 992, Langen Radar, identified, on runway heading climb to flight level 250

P: On runway heading climbing to flight level 250, KLM 992 (C: KLM 992, correct)

P: Langen Radar, Cargolux 717, inbound SIRPO, maintaining flight level 220

C: Cargolux 717, Langen Radar, identified, leave SIRPO heading 280, descend to flight level 60, vectoring for ILS (approach runway) 07

P: Leaving SIRPO heading 280, descending to flight level 60, Cargolux 717

C: Cargolux 717, (correct) speed 230 knoo..ri.. (correction) reduce speed to 230 knots (vectoring for ILS approach runway 07)

P: 230 knots, Cargolux 717 (C: Cargolux 717, correct)

P: Langen Radar, Lufthansa 246, inbound KERAX, maintaining flight level 220

C: Lufthansa 2 fower 6, Langen Radar, identified, leave KERAX heading 250, descend to flight level 80, vectoring for ILS (approach runway) 07

P: Leaving KERAX heading er... 250 , descending to flight level 80, Lufthansa 246

C: Lufthansa 2 fower 6, (correct) reduce speed to 230 knots (vectoring for ILS approach runway 07)

P: 230 knots, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

P: Langen Radar, Lufthan.. Lufthansa 831, airborne

C: Lufthansa 831, Langen Radar, identified, turn left direct to RASVO, climb to flight level 250

P: Direct to RASVO, climbing to flight level 250, Lufthansa 831 (C: Lufthansa 831, correct)

P: Langen Radar, Croatia 007, inbound OLALI, maintaining flight level 220

C: Croatia 007, Langen Radar, identified, leave OLALI heading 280, descend to flight level 70, vectoring for ILS (approach runway) 07

P: Leaving OLALI heading 280, descending to flight level 70, Croatia 007

C: Croatia 007, (correct) reduce speed to 230 knots (vectoring for ILS approach runway 07)

P: 230 knots, Croatia 007 (C: Croatia 007, correct)

P: Langen Radar, Turkish 399, inbound RASVO, maintaining flight level 220

C: Turkish 399, Langen Radar, identified, descend to flight level 70, expect ILS approach runway 07

P: Flight level 70, expect ILS approach runway 07, Turkish 399 (C: Turkish 399, correct)

C: Turkish 399, speed 230 knots

P: Speed 230 knots, Turkish 399 (C: Turkish 399, correct)

P: Langen Radar, Croatia 1311, inbound COLAS, maintaining flight level 220

C: Croatia 1311, Langen Radar, identified, leave COLAS heading 160, descend to flight level 60, vectoring for ILS (approach runway) 07

P: Leaving COLAS heading 160, descending to flight level 60, Croatia 1311

C: Croatia 1311, (correct) reduce speed to 230 knots (vectoring for ILS approach runway 07)

P: Reducing speed 230 knots, Croatia 1311 (C: Croatia 1311, correct)

P: Langen Radar, KLM 2001, inbound KERAX, maintaining flight level 220

C: KLM 2001, Langen Radar, identified, leave KERAX heading 250, descend to flight level 90, vectoring for ILS approach runway 07

P: Leaving KERAX heading 250, descending to flight level 90, KLM 2001

C: KLM 2001, (correct) reduce speed to 230 knots (vectoring for ILS approach runway 07)

P: Reducing speed to 230 knots, KLM 2001 (C: KLM 2001, correct)

C: SunExpress 111, turn right direct to OLALI

P: Turning right direct to OLALI, SunExpress 111 (C: SunExpress 111, correct)

C: KLM 992, turn right direct to OLALI

P: Turning right direct to OLALI, KLM 992 (C: KLM 992, correct)

C: Cargolux 717, reduce speed to 210 knots

P: Reducing speed 210 knots, Cargolux 717 (C: Cargolux 717, correct)

C: Croatia 007, reduce speed to 210 knots

P: Reducing speed 210 knots, Croatia 007 (C: Croatia 007, correct)

C: KLM 2001, reduce speed to 210 knots

P: Reducing speed 210 knots, KLM 2001 (C: KLM 2001, correct)

C: Lufthansa 2 fower 6, reduce speed to 210 knots

P: Reducing speed 210 knots, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: SunExpress 111, contact Langen Radar on 136,125

P: 136,125, KL.. SunExpress 111 (C: SunExpress 111, correct)

C: SunExprekss 936, turn right heading 320, descend to 3 thousand feet

P: Turning right heading 320, descending to 3 thousand feet, SunExpress 936 (C: SunExpress 936, correct)

C: KLM 992, contact Langen Radar on 136,125

P: 136,125, KLM 992 (C: KLM 992, correct)

C: Lufthansa 831, contact Langen Radar on 120,150

P: 120,150, Lufthansa 831 (C: Lufthansa 831, correct)

C: Croatia 1311, descend to 5 thousand feet, QNH 1016

P: Descending to 5 thousand feet, QNH 1016, Croatia 1311 (C: Croatia 1311, correct)

C: Turkish 399, reduce speed to 210 knots

P: Reducing speed 210 knots, Turkish 399 (C: Turkish 399, correct)

C: Croatia 1311, reduce speed to 210 knots

P: Reducing speed 210 knots, Croatia 1311 (C: Croatia 1311, correct)

C: SunExprekss 936, resume normal speed

P: Resuming normal speed, SunExpress 936

C: SunExprekss 936, turn right heading a.. 050, cleared for ILS (approach) runway 07, report (ILS) established

P: Turning right heading 050, cleared for ILS approach runway 07, wilco, SunExpress 936 (C: SunExpress 936, correct)

C: Turkish 789, reduce speed to 230 knots

P: Reducing speed 230 knots, Turkish 789 (C: Turkish 789, correct)

C: Turkish 789, turn left heading 160, reduce speed to 210 knots

P: Turning left heading 160, reducing speed 210 knots, Turkish 789 (C: Turkish 789, correct)

C: Turkish 789, descend to 3 thousand feet

P: Descending to 3 thousand feet, Turkish 789 (C: Turkish 789, correct)

C: K.. Croatia 1311, descend to fower thousand feet

P: Descending to 4 thousand feet, Croatia 1311 (C: Croatia 1311, correct)

P: SunExpress 936, ILS fully established

C: SunExprekss 936, (roger) contact Frankfurt Tower (on) 119,9

P: 119,9 SunExpress 936 (C: SunExpress 936, correct)

C: Turkish 399, descend to 5 thousand feet, QNH 1016

P: Descending to 5 thousand feet, QNH 1016, Turkish 399 (C: Turkish 399, correct)

C: Turkish 789, turn left heading 100, cleared for ILS approach runway 07, report ILS established

P: Turning left heading 100, cleared for ILS approach runway 07, wilco, Turkish 789 (C: Turkish 789, correct)

C: Croatia 1311, turn left heading 100, descend to 3 thousand feet, cleared for ILS approach runway 07, report ILS established

P: Turning left heading 100, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Croatia 1311 (C: Croatia 1311, correct)

C: Cargolux 717, turn left heading 250

P: Turning left heading 250, Cargolux 717 (C: Cargolux 717, correct)

C: Turkish 399, turn left heading 100, descend to 3 thousand feet, cleared for ILS approach runway 07, report ILS established

P: Turning left heading 100, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Turkish 399 (C: Turkish 399, correct)

C: Cargolux 717, descend to fower thousand feet, QNH 1016

P: Descending to 4 thousand feet, QNH 1016, Cargolux 717 (C: Cargolux 717, correct)

C: Croatia 007, turn left heading 250, descend to 5 thousand feet, QNH 1016

P: Turning left heading 250, descending to 5 thousand feet, QNH 1016, Croatia 007 (C: Croatia 007, correct)

C: Lufthansa 2 fower 6, descend to fower thousand feet, QNH 1016

P: Descending to 4 thousand feet, QNH 1016, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: Turkish 789, confirm ILS established

P: Turkish 789, ILS fully established

C: Turkish 789, (roger) contact (Frankfurt) Tower (on) 119,9

P: 119,9, Turkish 789 (C: Turkish 789, correct)

C: KLM 2001, descend to 5 thousand feet, QNH 1016

P: Descending to 5 thousand feet, QNH 1016, KLM 2001 (C: KLM 2001, correct)

C: Cargolux 717, turn right heading 330, reduce speed to 190 knots

P: Turning right heading 330, reducing speed 190 knots, Cargolux 717 (C: Cargolux 717, correct)

C: Croatia 1311, resume normal speed

P: Resuming normal speed, Croatia 1311

P: Croatia 1311, ILS fully established

C: Croatia 1311, (roger) contact Frankfurt Tower on 119,9

P: 119,9, Croatia 1311 (C: Croatia 1311, correct)

C: Cargolux 717, turn right heading 0 fower 0, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Cargolux 717 (C: Cargolux 717, correct)

C: Lufthansa 2 fower 6, turn a..left heading 160

P: Turning left heading 160, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: Lufthansa 2 fower 6, turn left heading 100, descend to 3 thousand feet, cleared for ILS approach runway 07, report ILS established

P: Turning left heading 100, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

P: Turkish 399, ILS fully established

C: Turkish 399, (roger) contact (Frankfurt) Tower (on) 119,9

P: 119,9, Turkish 399 (C: Turkish 399, correct)

C: KLM 2001, turn left heading 160, descend to fower thousand feet

P: Turning left heading 160, descending to 4 thousand feet, KLM 2001 (C: KLM 2001, correct)

C: KLM 2001, turn left heading 100, descend to 3 thousand feet, k..cleared for ILS approach runway 07, report ILS established

P: Turning left heading 100, descending to 3 thousand feet, cleared for ijel.. ILS approach runway 07, wilco, KLM 2001 (C: KLM 2001, correct)

P: Cargolux 717, ILS fully established

C: Croatia 007, a..turn right heading 320, reduce speed to 190 knots

P: Turning right heading 320, reducing speed 190 knots, Croatia 007 (C: Croatia 007, correct)

C: Cargolux 717, (roger) contact (Frankfurt) Tower (on) 119,9

P: 119,9, Cargolux 717 (C: Cargolux 717, correct)

C: Croatia 007, descend to fower thousand feet

P: Descending to 4 thousand feet, Croatia 007 (C: Croatia 007, correct)

C: Croatia 007, turn right heading 360, reduce speed to 170 knots or less

P: Turning right heading 360, reducing speed 170 knots or less, Croatia 007 (C: Croatia 007, correct)

P: Lufthansa 246, ILS fully established

C: Lufthansa 2 fower 6, (roger) contact (Frankfurt) Tower (on) 119,9

P: 119,9, Lufthansa 246 (C: Lufthansa 2 fower 6, correct)

C: KLM 2001, resume normal speed

P: Resuming normal speed, KLM 2001

C: Croatia 007, turn right heading 0 fower 0, descend to 3 thousand feet, cleared for ILS approach runway 07, report ILS established

P: Turning right heading 040, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Croatia 007 (C: Croatia 007, correct)

P: KLM 2001, ILS fully established

C: KLM 2001, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, KLM 2001 (C: KLM 2001, correct)

P: Croatia 007, ILS fully established

C: Croatia 007, roger, contact Frankfurt Tower on 119,9

P: 119,9, Croatia 007 (C: Croatia 007, correct)

Transkript vježbe EXE 3

P: Langen Radar, KLM 662, dobar dan, airborne

C: KLM 662, Langen Radar, identified, on runway heading climb to flight level 250

P: On runway heading climbing to flight level 250, KLM 662 (C: KLM 662, correct)

P: Langen radar, Lufthansa 424, dobar dan, inbound XINLA, maintaining flight level 220

C: Lufthansa fower 2 fower, Langen Radar, identified, leave XINLA heading 315, descend to 5 thousand feet, QNH 1016, vectoring for ILS (approach) runway 07

P: Er.. to leave XINLA heading 315, descending to fligh level er..correction, descending to 5 thousand feet, QNH 1016, vectoring for ILS approach runway 07, Lufthansa 424

C: Lufthansa fower 2 fower, (correct) speed 250 knots or greater

P: 250 knots or greater, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

P: Langen Radar, Turkish 998, dobar dan, inboud OLALI, maintaining flight level 220

C: Turkish 998, Langen Radar, identified, leave OLALI heading 280, descend to flight level 70, vectoring for ILS (approach) runway 07

P: To leave OLALI heading 280, descending to flight level 70, vectoring for ILS approach runway 07, Turkish 998 (C: Turkish 998, correct)

P: Langen Radar, Croatia 459, dobar dan, inbound SIRPO, maintaining flight level 220

C: Croatia fower 59, Langen Radar, identified, leave SIRPO heading 280, descend to flight level 60, vectoring for ILS approach runway 07

P: To leave SIRPO heading 280, descending to flight level 60, vectoring for ILS approach runway 07, a.. Croatia Croatia 459 (C: Croatia fower 59, correct)

P: Langen Radar, SunExpress 009, dobar dan, airborne

C: SunExprekss 009, Langen Radar, identified, on runway heading climb to flight level 250

P: On runway heading climbing to flight level 250, SunExpress 009 (C: SunExpress 009, correct)

P: Langen Radar, Turkish 218, dobar dan, inbound SIRPO, maintaining flight level 220

C: Turkish 218, Langen Radar, identified, leave SIRPO heading 280, descend to flight level 80, vectoring for ILS (approach) runway 07

P: To leave SIRPO heading 280, descending to flight level 80, vectoring for ILS approach runway 07, Turkish 218 (C: Turkish 218, correct)

P: Langen Radar, Cargolux 932, airborne

C: Cargolux 932, Langen Radar, identified, on runway heading climb to flight level 250

P: On runway heading climbing to flight level 250, Cargolux 932 (C: Cargolux 932, correct)

P: Langen...

C: Tu..

P: Double transmission, please say again

C: Turkish 218, r..reduce speed to 230 knots

P: Reducing speed to 230 knots, Turkish 218 (C: Turkish 218, correct)

C: Croatia fower 59, reduce speed to 230 knots

P: Reducing speed to 230 knots, Croatia 459 (C: Croatia fower 59, correct)

P: Langen Radar, Cargolux 133, dobar dan, overhead COLAS, maintaining flight level 220

C: Cargolux 133, Zag.. correction, Langen Radar, identified, fly heading 155, descend to flight level 60, vectoring for ILS (approach) runway 07

P: Flying heading 155, descending to flight level 60, vectoring for ILS approach runway 07, Cargolux 133 (C: Cargolux 133, correct)

P: Langen Radar, KLM 1114, dobar dan, overhead XINLA, maintaining flight level 220

C: KLM 111 fower, Langen Radar, identified, fly heading 320, descend to flight level 60, vectoring for ILS (approach) runway 07

P: Flying heading 320, descending to flight level 60, vectoring for ILS approach runway 07, KLM 1114 (C: KLM 111 fower, correct)

P: Langen Radar, SunExpress 777, dobar dan, overhead OLALI, maintaining flight level 220

C: SunExprekss 777, Langen Radar, identified, fly healing.. (correction, fly) heading 280, descend to flight level 90, vectoring for ILS (approach) runway 07

P: Flying heading 280, descending to flight level 90, vectoring for ILS approach runway 07, SunExpress 777 (C: SunExpress 777, correct)

C: Turkish 998, speed 230 knots

P: A..speed 230 knots, Turkish 998 (Turkish 998, correct)

C: SunExpress 777, reduce speed to 230 knots

P: Reducing speed to 230 knots, SunExpress 777 (C: SunExpress 777, correct)

P: Langen Radar, Cedar jet 621, dobar dan, a..overhead COLAS, am.. maintaining flight level 220

C: Cedar jet 621, Langen Radar, identified, leave COLAS heading 1 fower 0, descend to flight level 70, vectoring for ILS (approach) runway 07

P: Leaving COLAS heading 140, descending to flight level 70, vectoring for ILS approach runway 07, Cedar jet 621 (C: Cedar jet 621, correct)

P: Lufthansa 019, dobar dan, airborne

C: Lufthansa 019, Langen Radar, identified, on runway heading climb to flight level 220

P: On runway heading climbing to flight level 220, Lufthansa 019 (C: Lufthansa 019, correct)

C: KLM 662, turn right direct to XINLA

P: Turning right direct to XINLA, KLM 662 (C: KLM 662, correct)

C: Lufthansa fower 2 fower, descend to fower thousand feet

P: Descending to 4 thousand feet, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

C: KLM 111 fower, descend to 5 thousand feet, QNH 1016

P: Descending to 5 thousand feet on QNH 1016, KLM 1114 (C: KLM 111 fower, correct)

C: Cargolux 932, turn left direct to RASVO

P: Left direct to RASVO, Cargolux 932 (C: Cargolux 932, correct)

C: SunExprekss 009, turn right direct to XINLA

P: Right direct to XINLA, SunExpress 009 (C: SunExpress 009, correct)

C: KLM 111 fower, turn left heading 305

P: Turning left heading 305, KLM 1114 (C: KLM 111 fower, correct)

C: KLM 662, contact Langen Radar (on) 136,125

P: 136,125, KLM 662 (C: KLM 662, correct)

C: Lufthansa 019, turn right dilect..(correction, turn right) direct to SIRPO

P: Aa.. right direct to SIRPO, Lufthansa 019 (C: Lufthansa 019, correct)

C: Cargolux 932, contact Langen Radar (on) 120,150

P: 120,150, Cargolux 932 (C: Cargolux 932, correct)

C: SunExprekss 009, contact Langen Radar on 136,125

P: 136,125, SunExpress 009 (C: SunExpress 009, correct)

C: Cargolux 133, descend to fower thousand feet, QNH 1016

P: Descending to 4 thousand feet on QNH 1016, Cargolux 133 (C: Cargolux 133, correct)

C: Cedar jet 621, descend to 5 thousand feet, QNH 1016

P: Descending to 5 thousand feet on QNH 1016, Cedar jet 621 (C: Cedar jet 621, correct)

C: Cargolux 133, reduce speed to 210 knots

P: Reducing speed to 210 knots, Cargolux 133 (C: Cargolux 133, correct)

C: Cedar jet 621, reduce speed to..230 knots

P: Reducing speed to 230 knots, Cedar jet 621 (C: Cedar jet 621, correct)

C: Lufthansa fower 2 fower, turn right heading 330, descend to 3 thousand feet

P: Turning right heading 330, descending to 3 thousand feet, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

C: Lufthansa fower 2 fower, speed 230 knots

P: Speed 230 knots, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

C: Lufthansa 019, contact Langen Radar (on) 136,125

P: 136,125, Lufthansa 019 (C: Lufthansa 019, correct)

C: KLM 111 fower, speed 230 knots

P: Speed 230 knots, KLM 1114 (C: KLM 111 fower, correct)

C: Cargolux 133, turn right heading 160, reduce speed to 190 knots

P: Turning right heading 160, reducing speed to 190 knots, Cargolux 133 (C: Cargolux 133, correct)

C: Lufthansa fower 2 fower, turn right heading 0 fower 0, cleared for ILS approach runway 07, report ILS established

P: Turning right heading 040, cleared for ILS approach runway 07, wilco, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

C: KLM 111 fower, descend to fower thousand feet

P: Descending to 4 thousand feet, KLM 1114 (C: KLM 111 fower, correct)

C: KLM 111 fower, turn right heading 330, reduce speed to 210 knots

P: Turning right heading 330, des..aa.. reducing speed to 210 knots, KLM 1114 (C: KLM 111 fower, correct)

C: Lufthansa fower 2 fower, reduce..correction, resume normal speed

P: Normal speed, Lufthansa 424

C: KLM 111 fower, reduce speed to 190 knots

P: Reducing speed to 190 knots, KLM 1114 (C: KLM 111 fower, correct)

C: Cargolux 133, reduce speed to 170 knots

P: Reducing speed to 170 knots, Cargolux 133 (C: Cargolux 133, correct)

P: Lufthansa 424, established on ILS for runway 07

C: Lufthansa fower 2 fower, (roger) contact (Frankfurt) Tower (on) 119,9

P: 119,9, Lufthansa 424 (C: Lufthansa fower 2 fower, correct)

C: KLM 111 fower, turn right heading 0 fower 0, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, cleared for ILS approach runway 07, wilco, KLM 1114

C: KLM 111 fower, (correct) descend to 3 thousand feet, still cleared

P: Descending to 3 thousand feet, still cleared, KLM 1114 (C: KLM 111 fower, correct)

C: Cargolux 133, turn left heading 100, descend to 3 thousand feet, k..cleared for ILS (approach) runway 07, report (ILS) established

P: Turning left heading 100, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Cargolux 133 (C: Cargolux 133, correct)

C: Cedar jet 621, turn right heading 250

P: Turning right heading 250, Cedar jet 621 (C: Cedar jet 621, correct)

C: Croatia fower 59, turn left heading 250

P: Turning left heading 250, Croatia 459 (C: Croatia fower 59, correct)

C: Turkish 998, turn left heading 250

P: Turning left heading 250, Turkish 998 (C: Turkish 998, correct)

C: KLM 111 fower, resume normal speed

P: Normal speed, KLM 1114

C: Turkish 218, reduce speed to 210 knots

P: Reducing speed to 210 knots, Turkish 218 (C: Turkish 218, correct)

C: Croatia fower 59, turn right heading ..330, descend to 3 thousand feet, QNH 1013

P: Turning right heading 330 at QNH 1013, Croatia 459 (C: Croatia fower 59, correct, descend to 3 thousand feet)

C: Croatia fower 59, reduce speed to 210 knots

P: Reducing speed to 210 knots, Croatia 459 (C: Croatia fower 59, correct)

C: SunExpress 777, turn left heading 250

P: Turning left heading 250, SunExpress 777 (C: SunExpress 777, correct)

C: Turkish 218, turn left heading 250

P: Turning left heading 250, Turkish 218 (C: Turkish 218, correct)

P: KLM 1114, established on ILS for runway 07

C: KLM 111 fower, (roger) contact (Frankfurt) Tower (on) 119,9

P: 119,9, KLM 1114 (C: KLM 111 fower, correct)

C: Turkish 998, reduce speed to 210 knots

P: Reducing speed to 210 knots, Turkish 998 (C: Turkish 998, correct)

C: SunExpress 777, reduce speed to 210 knots

P: Reducing speed to 210 knots, SunExpress 777 (C: SunExpress 777, correct)

C: Cargolux 133, resume normal speed

P: Normal speed, Cargolux 133

C: Croatia fower 59, turn right heading 0 fower 0, cleared for ILS approach runway 07, report (ILS) established

P: Turning right heading 040, cleared for ILS approach runway 07, wilco, Croatia 459 (C: Croatia fower 59, correct)

P: Cargolux 133, established on ILS for runway 07

C: Cargolux 133, (roger) contact (Frankfurt) Tower (on) 119,9

P: 119,9, Cargolux 133 (C: Cargolux 133, correct)

C: Cedar jet 621, reduce speed to 210 knots

P: Reducing speed to 210 knots, Cedar jet 621 (C: Cedar jet 621, correct)

C: Cedar jet 621, continue a.. left heading 100, descend to 3 thousand feet, cleared for ILS approach runway 07, report (ILS) established

P: Turning left heading 100, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, Cedar jet 621 (C: Cedar jet 621, correct)

C: Croatia fower 59, resume normal speed

P: Normal speed, Croatia 459

C: Turkish 218, turn right heading 330

P: Turning right heading 330, Turkish 218 (C: Turkish 218, correct)

C: Turkish 218, descend to fower thousand feet, QNH 1016

P: Descending to 4 thousand feet on QNH 1016, Turkish 218 (C: Turkish 218, correct)

P: Croatia 459, established on ILS for runway 07

C: Croatia fower 59, (roger) contact (Frankfurt) Tower (on) 119,9

P: 119,9, Croatia 459 (C: Croatia fower 59, correct)

C: SunExpress 777, descend to flight level 80

P: Descending to flight level 80, SunExpress 777 (C: SunExpress 777, correct)

C: Turkish 218, turn right heading 0 fower 0, cleared for ILS approach runway 07, report ILS established

P: Turning right heading 040, cleared for ILS approach runway 07, wilco, Turkish 218

C: Turkish 218, (correct) descend to 3 thousand feet, still cleared

P: Descending to 3 thousand feet, still cleared, Turkish 218 (C: Turkish 218, correct)

C: Turkish 998, descend to fower thousand feet, QNH 1016

P: Descending to 4 thousand feet on QNH 1016, Turkish 998 (C: Turkish 998, correct)

C: SunExprekss 777, descend to 5 thousand feet, QNH 1016

P: Descending to 5 thousand feet on QNH 1016, SunExpress 777 (C: SunExpress 777, correct)

C: Cedar jet 621, resume normal speed

P: Normal speed, Cedar jet 621

C: Turkish 998, turn right heading 3 fower 0

P: Turning right heading 340, Turkish 998 (C: Turkish 998, correct)

P: Cedar jet 621, established on ILS for runway 07

C: Cedar jet 621, (roger) contact Frankfurt Tower on 119,9

P: 119,9, Cedar jet 621 (C: Cedar jet 621, correct)

C: Turkish 998, turn right heading 0 fower 0, descend to 3 thousand feet, cleared for ILS (approach) runway 07, report (ILS) established

P: Turning right heading 040, descending to 3 thousand feet, a..cleared for ILS approach runway 07, wilco, Turkish 998 (C: Turkish 998, correct)

C: SunExprekss 777, reduce speed to 21...correction, (reduce speed to) 190 knots

P: Reducing speed to 190 knots, SunExpress 777 (C: SunExpress 777, correct)

C: Turkish 218, re..sume normal speed

P: Normal speed, Turkish 218

C: SunExpress 777, turn right heading 010, descend to fower thousand feet

P: A..turning right heading 010, descending to 4 thousand feet, SunExpress 777 (C: SunExpress 777, correct)

P: Turkish 218, a..established on ILS for runway 07

C: Turkish 218, roger, contact Frankfurt Tower (on) 119,9

P: 119,9, Turkish 218 (C: Turkish 218, correct)

C: SunExpress 777, turn right heading 0 fower 0, descend to 3 thousand feet, cleared for ILS approach runway 07, report ILS established

P: Turning right heading 040, descending to 3 thousand feet, cleared for ILS approach runway 07, wilco, SunExpress 777 (C: SunExpress 777, correct)

C: Turkish 998, resume normal speed

P: Normal speed, Turkish 998

P: Turkish 998, established on ILS for runway 07

C: Turkish 998, roger, contact (Frankfurt) Tower (on) 119,9

C:... resume normal speed

P: Normal speed, SunExpress 777

P: SunExpress 777, established on ILS for runway 07

C: SunExpress 777, (roger) contact (Frankfurt) Tower (on) 119,9

P: 119,9, SunExpress 777

C: SunExpress 777, correct

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U Zagrebu, 6.9.2019 Marina Šušak

(potpis)