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| Use Case: *Generating EFPS* |
| ID: *1* |
| Goal: *Generating Electronic Flight Progress Strip (EFPS) for the aircraft.* |
| Primary actor: *Pilot* |
| Secondary actor(s): *Flight Plan Logging system, Air Controller (AIC), Ground Movements Controller (GMC), Pilot Database (PDB)* |
| Preconditions:   1. *Aircraft is not in the controlled airspace* |
| Post-conditions:   1. *EFPS is received by the AIC* 2. *Aircraft is ready for departure* |
| Main flow:  *1. Flight Plan Logging(FPL) system requests the details of the Flight Plan(FP)*  *2. Pilot enters the details of the Flight Plan in the FPL*  *3. FPL receives the details of FP*  *3. FPL requests for validation of Pilot name and license number*  *4. Pilot Database(PDB) receives the names and the license numbers*  *5. PDB validates the names and the license number*  *6. FPL receives confirmation from PDB*  *7. GMC sets the departure gate number in the FP*  *8. FP is completed and archived in Flight Plan Database.*  *9. EFPS is generated by the FPL System with the Flight Plan details.*  *10. EFPS is sent to the AIC system*  *11. EFPS is set as pending in the AIC system.* |
| Alternative flows:  *5a. PDB fails to validate the names and the license number*   1. *FPL receives the rejection from PDB* 2. *FPL requests the Pilot to enter the details again.* 3. *Repeat from step 2* |

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| Use Case: *Aircraft Departure* |
| ID: *2* |
| Goal: *<Process for aircraft departure >* |
| Primary actor: *<Pilot>* |
| Secondary actor(s): *<AIC>,<GMC>,<ATCC>* |
| Preconditions:  *1. Departure gate is set by GMC*  *2. EFPS approved by AIC* |
| Post-conditions:  *1. Successfully departed*  2. EFPS Handed over to ATCC |
| Main flow:   1. Pilot uses CMS for communication 2. GMC uses CMS for communication 3. Pilot gets in contact with GMC 4. Pilot informs of readiness 5. *GMC gets in contact with AIC* 6. *GMC requests for pushback from AIC* 7. AIC confirms pushback 8. GMC allows the aircraft to taxi to holding point 9. AIC takes over direct control of the aircraft 10. Aircraft awaits departure slot 11. Departure slot arrives 12. AIC instructs pilot to taxi 13. Pilot taxis and awaits final clearance. 14. Final clearance is given for take-off 15. Aircraft is airborne 16. Once airborne the AIC records the ATD on the EFPS 17. AIC requests the pilot to contact ATCC 18. AIC sends EFPS to ATCC 19. AIC marks (EFPS) as archive. |
| Alternative flows:  *<4.a> <Pilot not ready>*   1. *GMC awaits pilots response on readiness* 2. *All process are put on hold until pilot confirms readiness* 3. *Once readiness confirmed return to step 5*     *<6.a> <AIC denies Pushback>*   1. *Departure slot pushed back* 2. *Pilot awaits at gate until AIC confirms pushback* 3. *Once AIC confirms pushback return to step 7*   *…*  *<11.a> <Final clearance denied>*   1. *Pilot awaits at the end of the runway until final clearance given* 2. *Once clearance received return to Step 14*   *…* |

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| Use Case: *Handover Control* |
| ID: *3* |
| Goal: *ATCC handovers control to APC* |
| Primary actor: *ATCC* |
| Secondary actor(s): *Pilot* |
| Preconditions:   1. *An aircraft approaches the control zone* |
| Post-conditions:   1. *APC takes control of the aircraft.* 2. *Pilot contacts the APC* |
| Main flow:   1. *ATCC controller sends EFPS and alerts APC about the aircraft* 2. *EFPS is set as pending* 3. *APC receives the EFPS and sends a confirmation to ATCC* 4. *ATCC controller instructs the pilot to contact APC* 5. *Pilot receives the instruction* |
| Alternative flows:  *3a. ATCC does not receive confirmation.*   1. *Repeat step 1 in the main flow* 2. *Return to step 3* |

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| Use Case: Reaches *Control Zone* |
| ID: *4* |
| Goal: *Guiding pilot to the runway and send relevant information* |
| Primary actor: *Pilot* |
| Secondary actor(s): *Weather Station (WS)* |
| Preconditions:   1. *Aircraft approaches the control zone.* 2. *ATCC handovers the control to APC.* 3. *Pilot is instructed to contact APC.* |
| Post-conditions:   1. *AIC takes over the control* 2. *Pilot contacts AIC* |
| Main flow:   1. *Pilot contacts the APC.* 2. *APC receives contact and provides directional information to the pilot.* 3. *Pilot follows the glide path to the runway using the directional information.* 4. *Aircraft enters the Control Zone (CZ).* 5. *APC receives Weather Report (WR) from Weather Station (WS).* 6. *APC sends the WR to the aircraft’s on-board computer.* 7. *Pilot receives the WR from the on-board computers.* 8. *APC sends altitude and airspeed instruction on the EFPS periodically.* 9. *Pilot receives the instruction from the EFPS periodically.* 10. *Pilot reaches final approach.* 11. *APC sends WR, if WR changed significantly.* 12. *APC passes control to AIC.* |
| Alternative flows:  *12a. APC cannot pass the control to AIC because Control Zone is busy.*   1. *APC routes the aircraft to a holding stack* 2. *APC waits until landing slot is available* 3. *When a landing slot is available, AIC passes control to AIC* |

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| Use Case: Land Aircraft |
| ID: *5* |
| Goal: *Guiding pilot to the runway and send relevant information* |
| Primary actor: *Pilot* |
| Secondary actor(s): *ATCC* |
| Preconditions:   1. *Aircraft reaches the final approach* 2. *APC handovers the control to AIC.* 3. *Pilot is instructed to contact AIC.* |
| Post-conditions:   1. *Aircraft reaches their allocated gate.* 2. *Inbound process is complete.* |
| Main flow:   1. *AIC requests a gate number from GMC.* 2. *GMC provides the gate number to AIC* 3. *AIC logs the provided gate number on the EFPS.* 4. *Aircraft touches down* 5. *AIC records Actual Time of Arrival (ATA) and logs it into EFPS.* 6. *AIC advises the pilots of their allocated gate.* 7. *AIC completes the EFPS and is archived* |
| Alternative flows:  *4a. Aircraft takes too long to touch down.*   1. *AIC instruct the pilot to overshoot.* 2. *AIC handovers the control to APC.* 3. *APC gives directional information to glide path for a second attempt.* 4. *Return to step 4 in main flow.*   *4a3b. Airport is busy*   1. *APC places the aircraft to a holding stack.* 2. *APC waits until a departure slot is available.* 3. *APC gives directional information to glide path.* 4. *Return to step 4 in main flow.* |