Title: SARPS MANAGEMENT AND IMPLEMENTATION SYSTEM

Abstract: The present invention relates to a SMIS system for managing systematically an implementation status of an aviation safety regulation, and more particularly, to a SMIS system for analyzing, complementing and assessing automatically an implementation status of an aviation safety regulation in own country on the basis of standards and recommended practices prescribed in the annexes for 18 fields published and managed by the International Civil Aviation.
Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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SARPS MANAGEMENT AND IMPLEMENTATION SYSTEM

[Technical Field]

The present invention relates to an "international standard and recommended practice management and implementation system (hereinafter 'SMIS system')" for managing systematically an implementation status of an aviation safety regulation, and more particularly, to a SMIS system for analyzing, complementing and assessing automatically an implementation status of an aviation safety regulation in own country on the basis of "standards and recommended practices (hereinafter 'SARPs')" prescribed in the annexes for 18 fields published and managed by the International Civil Aviation Organization.

[Background Art]

The International Civil Aviation Organization (hereinafter "ICAO") is the international cooperation organization devoted to assure the safe, orderly and economic development of the civil air transportation society. The ICAO was founded on the basis of the International Civil Aviation Treaty (Chicago Treaty) signed by the representatives of 52 nations on 1944 in Chicago, U. S. A. and becomes the special organization within the Economic and Social Council of the
United Nation in 1947. The ICAO is devoted to a security "of a development and safety of the international civil air transportation, a realization of effective and economical transportation and a development of design of aircraft and an aerial navigation. And, the major affairs of The ICAO are to study for a standardization and unification the technology aspect such as the aircraft, the flight attendant, the communication, the airport facilities and the navigation and to provide the member nation with a result of the study. The ICAO controls and inspects whether all the member nations including Republic of Korea implement the aviation safety regulation or not, and the standards and recommended practices consisting of Annexes for 18 fields are utilized as the assessment reference during the control and inspection.

To prepare for an assessment of the control and the inspection as described above, in most of the member nations including Republic of Korea, an actual condition of implementation of the aviation safety regulation is analyzed by a manual operation and the complementary measures are taken against the inadequacies. However, the above management method has several problems as follows:

First, although new aviation safety regulation is examined several times on the basis of a given circumstance of own country from a time on which the regulation is initially
proposed to a time on which the final requirement is decided, the above process is carried out by a manual operation, and so too much time and man power should be required for inquiring an opinion and deciding an intension through an investigation of the related data. This process is done by State Letter issued by ICAO.

Second, the time required for dealing with the affair from an initiation of the implementation affair for satisfying each aviation safety regulation to a completion of the affair is frequently elongated more than one year, and so a management omission caused by the human error is generated.

Third, due to a characteristic of the manual operation, it is impossible to identify rapidly and correctly the actual condition. In order to verify and assess the complementation status of own country at a specific point in time, the processes of collecting a corresponding status data from the related department, synthesizing the collected data and then assessing the data are performed. However, a reliability of the results of the above procedure becomes lower.

Fourth, when the modified requirements are generated due to a revision of the aviation safety regulation, an ability to cope with the revision is insufficient. In a case where a requirement of the specific aviation safety regulation is modified or an aviation statue of own country is revised, it
is very difficult to verify the relationship among the aviation safety regulations more than 10,000 and several thousands of the articles of the domestic aviation statues corresponding to the aviation safety regulations, and so too much time and effort are required for analyzing to take an appropriate measure.

[Disclosure]

[Technical Problem]

Accordingly, the present invention is conceived to solve the above problem of the prior art as described above, an object of the present invention is to provide an SMIS system which verifies a responsiveness between the aviation safety regulation of The ICAO and the aviation statute in own country for implementing the aviation safety regulation of the ICAO and manages automatically an implementation status for complementing the responsiveness in real-time to maximize an efficiency of the affair for analyzing and implementing the international standard.

[Technical Solution]

In order to achieve the above object, the SMIS system of the present invention comprises a database server including a state letter database (1) consisting of the information on
state letters regarding a proposal for enacting/revising the SARPs, a safety regulation database (2) consisting of the information on the SARPs, an aviation statute database (3) consisting of the information on the aviation statute of own country, a comparison/analysis database (4) consisting of the comparison/analysis information on the aviation statute of own country and the SARPs, and an implementation management database (5) consisting of the information on the implementation status; a main server (20) including a comparison/management program (6) connected to the database server (10) and comparing/analyzing the information of the safety regulation database (2) and the information of the aviation statute database (3) and arranging/processing the comparing and analyzing results and then updating the results to the comparison/analysis database (4) and an analysis/report/assessment program (7) providing the information processed by the comparison/management program (6) and receiving the information on an implementation status to update the information to the implementation management database (5); and a terminal (30) connected to the main server via a cable network or a wireless network to transfer the information on the implementation status to the main server (20) and retrieving, lookuping, amending, saving or deleting the information stored in the database server (10).
through the main server (20).

At this time, the state letter database (1) comprises the information including a title, a number, an issue date, a distribution date, an essential content, an item indicating whether the state letter issued previously is existed or not and the number of the related annex.

In addition, the safety regulation database (2) comprises the information including the number of annex, the latest revised information, the number of regulation, a content of the regulation and an item indicating whether the duty is implemented or not.

Furthermore, the aviation statute database (3) comprises the information including a title of the statute, the number of the statute, a date on which the statute is enacted/revised, the number of the enacted/revised statute, the number of each article of the statute and a detailed content of the article.

Also, the comparison/analysis database (4) comprises the information classified into five (5) items of "Excellence" indicating "More exacting or exceeds", "Similarity" indicating "Different in character or other means of compliance", "Insufficiency" indicating "Less protective or partially compliance", "Not implemented" indicating "Insufficient at all" and "Not applicable" indicating that "Not applied to own country".
In addition, the implementation management database (5) comprises the information including a department in charge, a person in charge, a date on which a completion of the measure is requested, an acting plan, a reason for delaying and a display showing a termination of acting plan. At this time, it is preferred that the information on the person in charge is classified into the information of a staff in charge, an identifier and a deciding officer.

In addition, the end terminal (30) comprises a personal computer, a laptop computer, a personal digital assistant, a cellular phone and a private terminal.

[Description of Drawings]

Fig. 1 is a view showing one embodiment of a structure of a database for an SMIS system according to the present invention;

Fig. 2 is a view showing one embodiment of a structure of the SMIS system according to the present invention;

Fig. 3 is a conceptual view illustrating a task analysis in the SMIS system according to the present invention;

Fig. 4 is a view for comparing between procedures of task using or not using the SMIS system according to the present invention;

Fig. 5 is a view showing an example of the matrix for
verifying an implementation status of the international
regulation; and
Fig. 6, Fig. 7 and Fig. 8 are views showing operation examples
of the analysis/report/assessment program.

[Detailed description of main elements]
1: state letter database
2: safety regulation database
3: aviation statute database
4: comparison/analysis database
5: implementation management database
6: comparison/management program
7: analysis/report/assessment program
10: database server
20: main server
30: terminal

[Best Mode]
Hereinafter, the embodiments of the present invention
will be described in detail with reference to accompanying
drawings.

Fig. 1 is a view schematically showing one embodiment of
a structure of databases for the SMIS system according to the
present invention. The databases for the SMIS system of
according of to the present invention comprises a state letter database (1) consisting of a content of the state letter regarding a proposal for enacting/revising the SARPs; a safety regulation database (2) consisting of a content of the SARPs; an aviation statute database (3) consisting of a content of the aviation statute of own country; a comparison/analysis database (4) consisting of a comparison/analysis content of the aviation statute of own country and the SARPs; and an implementation management database (5) consisting of a content of the implementation status.

The state letter database (1) comprises a content of the state letter regarding a proposal for enacting/revising the SARPs, in more detail, comprises a title, a number, an issue date, a distribution date, an essential content, an item indicating whether the state letter issued previously is existed or not and the number of the related annex. The state letter database (1) can be constructed as shown in Fig. 1, the information as described above is systematically classified and stored in each table of the state letter database (1) as shown in Fig. 1. In the embodiment as shown in Fig. 1, the title, the number, the issue date, the distribution date and the essential content are stored in a table of Table_SL, a department in charge, an official in charge and a schedule for a measure are stored in a table of Table_SL_charge, an item
indicating whether the state letter issued previously is existed or not is stored in a table of Table_SL_Rule, a document file received from the ICAO and a document filed with the ICAO are stored in a table of Table_SL_File_Attach and a measure content notified to the ICAO is stored in a table of Table_SL_File_Reply, or the state letter database 1 can be constructed by combining the contents of items stored in the above tables. The database as shown in Fig. 1 is one embodiment for embodying the present invention, the present invention is limited to the structure as shown in Fig. 1 and titles of the tables and the structure can be modified within the range without departing from a scope of the present invention. The above feature is likewise applied to other databases 2, 3, 4 and 5.

The safety regulation database (2) consists of a content of the SARPs, in more detail, comprises the number of annex, the latest revised information, the number of regulation and a content of the regulation. In the embodiment as shown in Fig. 1, the number of annex is stored in a table of Table_Annex, and the latest revised information, the number of regulation and a content of the regulation are stored in a table of Table_Version.

The aviation statute database (3) consists of a content the aviation statute of own country, in more detail, comprises
a title of the statute, the number of the statute, a date on which the statute is enacted/revised, the number of the enacted/revised statute, the number of each article of the statute and a detailed content of the article. In the embodiment as shown in Fig. 1, the above contents can be stored as the item contents of a table of Table_Kor_Rule and a table of Table_Kor_Rule_Linke. At this time, Fig. 1 shows the system database according to the embodiment of the present invention to be utilized in Republic of Korea, and so a term of "Kor" indicating Republic of Korea is marked on the table. However, the name of the table may be modified according to a name of the country in which the system database according to the present invention is utilized.

The comparison/analysis database (4) consists of a comparison/analysis content between the SARPs (that is, a content of the safety regulation database (2) and the aviation statute of own country (that is, the aviation statute database 3), in more detail, the comparison/analysis database (4) is constructed to be displayed as one of the following 5 items:

•Excellence: More exacting or exceeds
•Similarity: Different in character or other means of compliance
•Insufficiency: Less protective or partially compliance
•Not implemented: Insufficient at all
In the embodiment as shown in Fig. 1, the comparison/analysis content can be stored as an item content of a table of Table_Annex_Rule. The implementation management database (5) consists of a content of the implementation status in more detail, comprises a department in charge, a person in charge (it is desirable to classify the person in charge into a staff in charge, an identifier and a deciding officer), a date on which a completion of the measure is requested, an acting plan, a reason for delaying and a display showing a termination of acting plan. In the embodiment as shown in Fig. 1, the department in charge and the person in charge take out the content stored in tables of Table_Department and Table_Authority and store it in a table of Table_Annex_Charge. Also, the date on which a completion of the measure is requested, the measure schedule, the reason for delaying and the display showing a termination of acting plan are stored in a table of Table_Charge. In addition, the information related to the management of the members who can retrieve, lookup, amend, save or delete the content of the databases is further stored in the implementation management database (5). Such information can comprise an announcement and an item library. In the
embodiment as shown in Fig. 1, the announcement and the item library are stored in a table of Table_Notice and a table of Table_Library, respectively, or the contents of items stored in the tables can be combined.

Fig. 2 is a view showing briefly the structure of the SMIS system according to the present invention, and Fig. 3 is a conceptual view illustrating a task analysis in the SMIS system according to the present invention. As shown in the drawings, the SMIS system according to the present invention comprises a database server (10), a main server (20) and a terminal (30). At this time, the database server (10) comprises the state letter database (1), the safety regulation database (2), the aviation statute database (3), the comparison/analysis database (4) and the implementation management database (5).

A comparison/management program (6) and an analysis/report/assessment program (7) are stored in the main server (20) and connected to the database server (10), and so these programs are communicated with each database in the database server (10) and run according to the database. The comparison/management program (6) compares the items of the safety regulation database (2) with the items of the aviation statute database (3) to classify an implementation of the aviation statute of own country against the SARPs into
"Excellence", "Insufficiency", "Similarity", "Not implemented" and "Not applicable". The main server (20) is connected to the terminals (30) via a wireless network or a wired network, and the terminals (30) access the database server (10) through the main server (20) to allow the user to verify an implementation status stored in the comparison/analysis database (4) in real-time. In addition, the comparison/management program (6) provides a comparison table between the SARPs and the aviation statute of own country using the result obtained by comparing the items of the safety regulation database (2) with the items of the aviation statute database (3) so that the user can easily lookup the related regulation through the terminal (30) if the item is changed.

Also, the analysis/report/assessment program (7) stored in the main server (20) provides the user (a staff in charge or a manager) with the data with a various forms processed through the comparison/management program (6) to allow the user to verify and assess the implementation status of the SARPs and to take a proper follow-up measure, if necessary.

The implementation status is stored in the implementation management database (5) described in the description regarding Fig. 1. The user can access the database server (10) through the main server (20) using the terminal (30) to retrieve, lookup, amend, save or delete each item of the implementation
management database (5) according to an authority. As described above, the content of the implementation management database (5) consists of a date on which a completion of the measure is requested, an acting plan, a reason for delaying and a display showing a termination of acting plan, and the implementation status is updated through the terminals (30), and so all the user can verify the implementation status in real-time.

Fig. 4 is a view for comparing between procedures of task using or not using the SMIS system according to the present invention. As shown in the drawing, a procedure of the standard and recommended practice management task can be divided broadly into a step of managing data of the SARPs, a step of managing corresponding articles of the aviation statute of own country, a step of processing a comparing/analyzing task, a step of managing an implementation of the SARPs and a step of analyzing/reporting/assessing the task result.

In general, in the step of managing data of the SARPs, all affairs are carried out by a manual operation S_old1 in which the operator manages the data using documents and files. Also, in the step of managing corresponding articles of the aviation statute of own country, the affairs are carried out by a manual operation S_old2 in which a staff in charge
depends on a personal experience and utilizes the documents and the files. In this process, too much man power and time should be required and there will be a strong possibility of generating the mistake. On the other hand, once the SMIS system according to the present invention is utilized, the data of the SARPs is stored on-line in the state letter database 1 (S_new1) and the aviation statute of own country is also stored on-line in the safety regulation database 2 (S_new2), and so the user can easily and rapidly search the correct information at any time without a possibility of generating the mistake after constructing the database.

In addition, in the step of comparing/analyzing the SARPs and the aviation statute of own country, all affairs are generally carried out by a manual operation (S_old3) in which the operator depends on a personal experience or memory and utilizes the documents or the files. Accordingly, there will be a strong possibility of generating the human error due to a wrong memory or a simple mistake in this process. However, once the SMIS system according to the present invention is utilized, the above process is performed in real-time (S_new3) by the comparison/management program, there is no need to compare and analyze the statute which was already compared/analyzed and anyone of the relevant persons in charge can receive easily and rapidly the corrected comparison table.
In the step of managing an implementation of the SARPs, since all affairs are generally carried out by a manual operation (S_old4) in which the operator utilizes the documents or the files, there are problems in that a process of performing the affair is ill-defined and it is very difficult to clarify where the responsibility lies in a case that any mistake is generated since there will be a strong possibility of generating the human error in a process of documentation for the state letter, the safety regulation and the aviation statute. However, once the SMIS system according to the present invention is utilized, the department in charge and the person in charge (that is, a staff in charge, an identifier and a deciding officer) are surely updated in real-time (S_new4), and so there is no margin for error and although the problems are generated, the stored information is rapidly searched so that it is possible to know clearly the step at which the error is generated. Accordingly, it is possible to clarify where the responsibility lies and the efficiency of affair is rapidly increased.

Also, in the step of analyzing/reporting/assessing the task result, since all affairs are generally carried out by a manual operation and the substantial same affairs are repeatedly performed (S_old5), like other steps, too much manpower and time should be required for performing the affairs.
However, once the SMIS system according to the present invention is utilized, the analysis/report/assessment program (7) monitors in real-time on the basis of the implementation management database (5) (S_new5), and so the systematic and efficient task analyzing results can be obtained.

One example of the operation flow of the SMIS system according to the present invention is described as follow. For example, in a case where the state letter regarding a revised proposal of the clause 1.1 of the ICAO Annex 1 is received, the information of a title of the state letter, an issue date, a distribution date, a department in charge, a person in charge, an acting plan and a document file received or filed are stored in the tables of Table_SL, Table_SL_Charge, Table_SL_Rule, Table_SL_File_Attach, Table_SL_File_Reply as shown in Fig. 1, respectively. Then if the clause 1.1 of the Annex 1 is officially proposed, the number of the annex, the regulation number, a content of the regulation and the latest revised information are stored in the tables of Table_Annex and Table_Version, respectively. The domestic regulation regarding an implementation of the requirement of the clause 1.1 of the Annex 1 is inputted to the table of Table_Kor_Rule and the comparison/analysis result for the clause 1.1 of the Annex 1 and the domestic regulation is inputted to the table of Table_Annex_Rule. According to the comparison/analysis
result, the department in charge, the person in charge, the date on which a completion of the measure is requested, the measure schedule, the reason for delaying (when there is a relevant data) and the display showing a termination of acting plan are inputted to the tables of Table_Annex_Charge and Table_Charge, respectively.

Fig. 5 is a view showing an example of the matrix for verifying an implementation status of the international regulation. As indicated in the table as shown in Fig. 5, the ICAO regulation and the domestic regulation are compared with each other and the information on the difference between the regulations is classified and entered into the database. For example, the domestic regulation judged as "Reinforce the regulation" means that the domestic regulation is managed in a state the ICAO regulation is more reinforced, and the domestic regulation judged as "There is no regulation" means that there is no corresponding regulation in own country so that there is need to revise the domestic regulation. After the information classified as described above is entered into the database, this data is taken out at any time by the comparison/management program (6) and the analysis/report/assessment program (7) and the required information is processed according to the item and the required category thereof and can be valuably utilized.
The comparison/management program (6) classifies all the inputted data into "Excellence", "Insufficiency", "Similarity", "Less protective or partially compliance" and "Not applicable" and processes the data into the data in the form of a graph or a table such as the entire items status, the entire difference status, a difference-less protective or partially compliance status and Not applicable, and then provides the user with the processed data. Fig. 5 shows one example of the form of the data processed and provided by the comparison/management program (6).

Fig. 6, Fig. 7 and Fig. 8 are views showing operation examples of the analysis/report/assessment program. The analysis/report/assessment program (7) processes the analyzing results of the entire data according to a request of the user, various purposes and requirements such as a difference status between the domestic regulation and the SARPs, a difference status of each department in charge, a transition of the difference, an examining result status, a status of items requiring the measure, a status of items requiring the measure-pending item/a delaying status/a list of pending items/a list of delayed items, a status of the enactment/revision of the statute and the like, and then provides the user with the processed data as the report. Fig. 6a shown the item status of each ICAO annex, the item status
can be printed in the form of a table or a graph as shown in the drawing. The user sees a screen on which the data processed by the analysis/report/assessment program (7) is displayed as shown in Fig. 6 and can know at a glance the status such as the number of the items according to No. of the annexes or a difference between the domestic regulation and the SARPs, a reinforcement of the reference. Fig. 7 shows an example in which a difference between the domestic regulation and the SARPs is printed in the form of the table. Fig. 7 shows that the analysis/report/assessment program (7) outputs the data in the form of the table, as known from the drawing, the data can be printed in the form of a graph shown at a lower side in Fig. 6. As described above, the analysis/report/assessment program (7) processes the information stored in the database by the means of various methods and then outputs the processed data, and so the user can rapidly and easily output, retrieve and lookup the desired information. Fig. 8 shows an example in which a status of pending items which require the measures is shown, the user can grasp at a glance the status of pending items which require the measures through the analysis/report/assessment program (7). Also, if any one of the pending items is conducted, the person in charge who has conducted the corresponding item updates this information through the
terminal (30) as shown in Fig. 2 in real-time. For example, in a state that the number of item in the status of pending items which require the measures in Annex6_The Others is 1 (one), once the person in charge conducts the corresponding item to complete the measure, the person in charge updates that the measures for the corresponding item is completed. Accordingly, the number of item in the status of pending items which require the measures in the table of Annex6_The Others of Fig. 8 is changed from 1 (one) to 0 (zero), and the number of item in the status of conducted items in the table of Annex6_The Others is changed from 0 (zero) to 1 (one), and so the user verifies the status of pending items in real-time. According to the prior art, since such affairs is generally performed by a manual operation using the documents, it is impossible to grasp immediately the status although the person in charge reports a completion of the measure. However, according to the analysis/report/assessment program (7), an understanding of such can be easily and rapidly achieved.

The present invention is not limited to the embodiment as described above, and those skilled in the art will appreciate that the conceptions and specific embodiments disclosed in the foregoing description may be readily utilized as a basis for modifying or designing other embodiments for carrying out the same purposes of the
present invention. Those skilled in the art will also appreciate that such equivalent embodiments do not depart from the spirit and scope of the invention as set forth in the appended claims.

[industrial Applicability]

The present invention as described above compares and analyzes a difference between the aviation statute and the SARPs, enters the related data into the database using the information technology such that the implementation status is managed in real-time to take the proper measures and automates a series of affair analyzing/conducting processes. Accordingly, according to the present invention, there is an effect in that the comparing/analyzing processes for the SARPs which are generally and repeatedly managed by a manual operation are automated. In addition, the present invention has an effect in that the drawbacks such as an increase of the required time, a lower of process efficiency of the man power and a waste of expenses caused by a manual operation are radically removed so that all the resource can be effectively utilized.

Also, since the present invention has the universal concept such that the present invention is applicable to every member nation of the International Civil Aviation Organization,
the system of the present invention can be applied in any country if the aviation statutes are entered into the database, and so the utilizing efficiency is maximized. In addition, the present invention can be introduced and applied to the international aviation society due to the above advantages so that there is the large ripple effect which can improve remarkably an aviation field of own country in the international aviation society.
[CLAIMS]

[Claim 1]

A SMIS system, comprising:

a database server (10) including a state letter database consisting of the information on state letters regarding a proposal for enacting/revising the SARPs; a safety regulation database (2) consisting of the information on the SARPs; an aviation statute database (3) consisting of the information on the aviation statute of own country; a comparison/analysis database (4) consisting of the comparison/analysis information on the aviation statute of own country and the SARPs; and an implementation management database (5) consisting of the information on the implementation status;

a main server (20) including a comparison/management program (6) connected to the database server (10) and comparing/analyzing the information of the safety regulation database (2) and the information of the aviation statute database (3) and arranging/processing the comparing and analyzing results and then updating the results to the comparison/analysis database (4); and an analysis/report/assessment program (7) providing the information processed by the comparison/management program (6) and receiving the information on an implementation status to update the information to the implementation management
database (5); and

a terminal (30) connected to the main server (20) via a cable network or a wireless network to transfer the information on the implementation status to the main server (20) and retrieving, lookupting, amending, saving or deleting the information stored in the database server (10) through the main server (20).

[Claim 2]

The SMIS system as set forth in claim 1, wherein the state letter database comprises the information including a title, a number, an issue date, a distribution date, an essential content, an item indicating whether the state letter issued previously is existed or not and the number of the related annex.

[Claim 3]

The SMIS system as set forth in claim 1, wherein the safety regulation database (2) comprises the information including the number of annex, the latest revised information, the number of regulation, a content of the regulation and an item indicating whether the duty is implemented or not.

[Claim 4]

The SMIS system as set forth in claim 1, wherein the aviation statute database (3) comprises the information including a title of the statute, the number of the statute, a
date on which the statute is enacted/revised, the number of the enacted/revised statute, the number of each article of the statute and a detailed content of the article.

[Claim 5]

5 The SMIS system as set forth in claim 1, wherein the comparison/analysis database (4) comprises the information classified into five (5) items of "Excellence" indicating "More exacting or exceeds", "Similarity" indicating "Different in character or other means of compliance", "Insufficiency" indicating "Less protective or partially compliance", "Not implemented" indicating "Insufficient at all" and "Not applicable" indicating that "not applied to own country".

[Claim 6]

The SMIS system as set forth in claim 1, wherein the implementation management database (5) comprises the information including a department in charge, a person in charge, a date on which a completion of the measure is requested, an acting plan, a reason for delaying and a display showing a termination of acting plan.

[Claim 7]

The SMIS system as set forth in claim 6, the information on the person in charge is classified into the information of a staff in charge, an identifier and a deciding officer.

[Claim 8]
The SMIS system as set forth in claim 1, wherein the terminal 30 comprises a personal computer, a notebook computer, a personal digital assistant, a cellular phone and a private terminal.
Figure 2

10 Database Server
1 State letter DB
2 Safety regulation DB
3 Aviation statute DB
4 Comparison/Analysis DB
5 Implementation management DB

20 Main Server
6 Comparison/Management Program
7 Analysis/Report/Assessment Program

Cable/Wireless Network
30 Computers
Figure 4

**The present invention**

- S_new 1 → Construct DB with on-line (State letter DB)
- S_new 2 → Construct DB with on-line (Safety regulation DB)
- S_new 3 → Process in real-time with the Comparison /Management Program
- S_new 4 → Clarify in each step
- S_new 5 → Manage systematically by the real-time monitoring

**The conventional method**

- Manage the international standard and
- Manage the corresponding article of the domestic
- Process the affair for the comparison and analysis
- Manage the implementation of the internal-
- Analyze/report/assess the affair result

- Manual operation (Document, File)
- Experience or Manual operation of each person in charge (Document, File)
- Depend on an experience or memory of each person in charge (Document, File)
- Indefiniteness of the implementation process and Obscurity regarding on where the responsibility lie
- Perform repeatedly the manual operation and the same affairs

- S_old 1
- S_old 2
- S_old 3
- S_old 4
- S_old 5
### Figure 5

<table>
<thead>
<tr>
<th>Annex 1</th>
<th>1.2.4.3</th>
<th>ICAO regulation</th>
<th>Domestic regulation</th>
<th>Difference</th>
<th>Examination Results</th>
<th>Items requiring the measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Except as provided in 1.2.5.2.3, flight crew members or air traffic controllers shall not exercise the privileges of their licence unless they hold a current Medical Assessment appropriate to the licence.</td>
<td>Clause 2, Article 31 of Aviation law (Boarding of the aviation operator)</td>
<td>no difference</td>
<td>Compared with the annex. The ICAO do not allow no exceptions, and so the basis will be reinforced and enforced.</td>
<td>There is need to examine where the exceptions will be recognized or not.</td>
</tr>
</tbody>
</table>

| Annex 14 | 3.12.9 | The location of a runway-holding position established in accordance with 3.12.3 shall be such that a holding aircraft or vehicle will not infringe the obstacle free zone, approach surface, take-off climb surface or ILS/MLS critical/sensitive area or interfere with the operation of radio navigation aids. | Article 44 of Installation basis of facilities of air station: Dimension 3: In the runway-holding location provided according to 2. Clause 2, Article 43, air craft and vehicle should not infringe the obstacle free zone, approach surface and radio navigation critical area/sensitive area of ILS/MLS and interfere with the operation of navigation safety radio aids. | no difference | "Take off climb surface" is not defined. There is need to reflect “Take off climb surface" after examining the regulation regarding the above linked to the basis of the obstacle limiting surface of Article 4. | After examining collectively, a basis for the air station facility will be revised. |

| Annex 6 | 6.3.3.1 | Flight recorders | 3. Clause 1, Article 135-2 of Enforcement regulation of the aviation law (Accident prevention apparatus) - At least one FDR/CVR prescribed by the Annex 6 should be equipped. 7.3.6.1 of Navigation technology basis (cockpit voice recorder) | no difference | In the aviation law and the navigation technology basis regarding FDR/CVR, (1) a detailed basis regarding the recording element is not provided; and (2) unless the paragraph "conform to the annex" is uniformly applied, it is apprehended that the reliability becomes worse. | The regulation regarding FDR/VCR will be generally reconstituted (revise the navigation technology basis). |

| Annex 8 | 4.3.7 | The State of Design shall ensure that in respect of aeroplanes over 5 700 kg maximum certificated take-off mass, there exists a continuing structural integrity programme to ensure the airworthiness of the aeroplane. The programme shall include specific information concerning corrosion prevention and control. | There is no domestic regulation to be referred. | no difference | The measure is required in order to revise the above regulation to be contained in the navigation technology basis. | Revise the Paragraph 5.5, Chapter 5 of the navigation technology basis. |

| Annex 14 | 5.3.5.9 | Siting | There is no regulation since the domestic airport is not provided with the corresponding facility. | no difference | In our country, T-VASIS is not provided. So, we think that these annexes corresponds to "There is no relevant data" | }
(A) Item status of each annex of the ICAO
Status of difference between the domestic regulation and the international standard and recommended practice

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(B) Status of difference between the domestic regulation and the international standard and recommended practice
**Figure 8**

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INTERNATIONAL SEARCH REPORT

INTERNATIONAL SEARCH REPORT
PCT/KR2006/005492

A. CLASSIFICATION OF SUBJECT MATTER

G06F 17/40(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 08 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PAJ, FPD, USPAT, eKIPASS, IEEE, YAHOO, GOOGLE. Keyword "SARPs, aviation, rules, ICAO, Law, Statute, legislation"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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See patent family annex

Further documents are listed in the continuation of Box C

* Special categories of cited documents

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

Date of the actual completion of the international search

13 SEPTEMBER 2007 (13 09 2007)

Date of mailing of the international search report

14 SEPTEMBER 2007 (14.09.2007)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office

920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea

Authorized officer

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