

[SS 1] ..fi epodoc

 Database: EPODOC

[EPODOC: SS 1] hummidity and sensor

Results in EPODOC 1

[SS 2] ..v

[EPODOC: SS 2] moisture and sensor

Results in EPODOC 15.080

[SS 3] ss2 and electronic

Results in EPODOC 30

[SS 4] ss3 and protection

Results in EPODOC 10

[SS 5] ..li



1/10 © EPODOC / EPO

PN - [CN106253245](#) A 20161221

PR - CN20161699685 20160822

AP - CN20161699685 20160822

DT - I

PA - NANJING SAC AUTOMATION CO LTD

TI - Method of judging accelerated opening of asymmetric open element during single reclosing period

AB - The invention discloses a method of judging accelerated opening of an asymmetric open element during a single reclosing period. The method comprises the following steps: SS1, the valid value IOTBL of a zero-sequence current mutational volume and a floating threshold IOFDMK of the zero-sequence current mutational volume during a closing period are calculated, wherein the floating threshold IOFDMK of the zero-sequence current mutational volume is the valid value of the zero-sequence current mutational volume before one frequency, and the Fourier value of the zero-sequence current before one frequency is $I_0(t-N)$; SS2, the valid value of zero-sequence current $I_0(t)$ at the current moment and a valid value IOFDMK of the zero-sequence current mutational volume before one frequency are calculated; and **SS3**, according to the

judgment on opening of an asymmetric open element, during a closing acceleration period, if the valid value IOTBL of the zero-sequence current mutational volume is larger than the sum of the floating threshold and rated current and the valid value IO(t) of the zero-sequence current at the current moment is larger than the Fourier value of the zero-sequence current before one frequency, the asymmetric open element is opened, or otherwise, the asymmetric open element is not opened. The defect that the oscillation blocking distance acceleration action speed for single-phase reclosing to permanent fault is slow is solved, and quickness of a line **protection** device is improved.

2/10 © EPODOC / EPO

PN - [CN105576812](#) A 20160511

PNFP - CN105576812B B 20171103

PR - CN20161113154 20160229

AP - CN20161113154 20160229

DT - I

CT - || STSE (A)

[US7642757](#) B2 20100105 [A] (YOON JONG-SOO [KR], et al)

[A] 1-4

* 全文 *;

[CN102983577](#) A 20130320 [A] (EPRI SCIENCE & TECHNOLOGY CO, et al)

[A] 1-4

* 全文 *;

[CN103545799](#) A 20140129 [A] (BEIJING SIFANG AUTOMATION CO, et al)

[A] 1-4

* 全文 *;

[CN104124682](#) A 20141029 [A] (NARI RELAYS ELECTRIC CO LTD, et al)

[A] 1-4

* 全文 *;

[CN104967148](#) A 20151007 [A] (HU GAOFEI)

[A] 1-4

* 全文 *

PA - (A)

ELECTRIC POWER RES INST STATE GRID JIANGSU ELECTRIC POWER COMPANY; STATE GRID CORP CHINA

TI - (A)

Zero sequence current locking **protection** method for contact failure of UPFC parallel transformer transfer switch

AB - (A)

The invention discloses a zero sequence current locking **protection** method for contact failure of a UPFC parallel transformer transfer switch. The method comprises steps that SS1, a parallel side line area and a transformer low voltage side connection zone are taken as equivalence to acquire an equivalent circuit graph, and circuit parameters are set; SS2, a bus coupler zero sequence current is calculated according to the equivalent circuit graph and the circuit parameters; **SS3**, contact failure logic discrimination is carried out; SS4, according to the contact failure motion result, the transfer switch in a contact failure state is reclosed, when switching from a first transformer to a second transformer, a transformer switch of the second transformer is closed, when contact

failure is detected, reclosing is carried out, after reclosing succeeds, a transformer switch of the first transformer is opened; if reclosing fails, switching is forbidden. According to the method, for a problem of operation stop of a UPFC system caused by contact failure in a switching operation process of the UPFC parallel transformer transfer switch, an adverse logic discrimination method is proposed, reclosing is realized during contact failure, and power supply safety and reliability of a UPFC access area are improved.

3/10 © EPODOC / EPO

PN - [CN105348373](#) A 20160224
 PR - CN20151824967 20151124
 AP - CN20151824967 20151124
 DT - I
 CNOI - [C07K14/315](#)
 CNOA - [A61K39/00](#)
 PA - WUHAN TIANZHONG ANIMAL HUSBANDRY CO LTD
 TI - Adhesion antigen SSUST3_1962 of streptococcus suis serotype 3, and preparation method and application thereof
 AB - The invention discloses an adhesion antigen SSUST3_1962 of streptococcus suis serotype 3 (**SS3**), and a preparation method and application thereof. According to the invention, SSUST3_1962 recombinant protein is constructed, and the protein can adhere to Hep-2 cells so as to interfere in infection of cells with **SS3**. In the process of research in the invention, a purified recombinant antigen can cause substantial humoral antibody response of a mouse, and an immunized mouse shows strong **protection** capability to challenge of a lethal dose of **SS3**. Moreover, whole blood analysis test results show that secondarily immunized serum of SSUST3_1962 can effectively inhibit growth of bacteria. All the research results show that the SSUST3_1962 recombinant protein can be used for preparing a subunit vaccine for preventing and treating **SS3** infection.

4/10 © EPODOC / EPO

PN - [CN105243212](#) A 20160113
 PR - CN20151649174 20151009
 AP - CN20151649174 20151009
 DT - I
 CT - || STSE (A)
[KR20130019228](#) A 20130226 [A] (KOREA ELECTRIC POWER CORP [KR])
 [A] 1-7
 * 全文 *;
[CN103365994](#) A 20131023 [Y] (BEIJING FANHUA HENGXING TECHNOLOGY CO LTD)
 [Y] 1-7
 * 说明书第3页第[0050]段-第4页第[0055]段,附图1 *;
[CN104239406](#) A 20141224 [A] (GRIDNT INC)
 [A] 1-7
 * 全文 *;
[CN104699801](#) A 20150610 [Y] (STATE GRID CORP CHINA, et al)

[Y] 1-7

* 说明书第1页第[0003]段-第7页第[0088]段 *

- PA - NANJING SAC AUTOMATION CO LTD
- TI - Visual association configuration method for virtual terminal based on functional information set
- AB - The present invention discloses a visual association configuration method for a virtual terminal based on a functional information set. The method is characterized by comprising the following steps: step SS1, classifying an information data set (DataSet) in a model file of a transmitting terminal of a secondary device, and forming the functional information set; step SS2, drawing an information flow graph of the secondary device according to the functional information set in the step SS1 and a secondary device relay **protection** and monitoring control principle; and Step **SS3**, performing visual association configuration of the virtual terminal of the secondary device according to the information flow graph in the step SS2. According to the method disclosed by the present invention, the information flow graph is adopted so as to implement visual and quick association configuration of the virtual terminal of the secondary device, thereby further enhancing the visualization degree of the association configuration of the virtual terminal of the secondary device of a substation and improving the efficiency of the association configuration of the virtual terminal; and the method is high in practicality.

5/10 © EPODOC / EPO

- PN - [CN105186452](#) A 20151223
- PNFP - CN105186452B B 20171031
- PR - CN20151573765 20150910
- AP - CN20151573765 20150910
- DT - I
- CT - || STSE (A)
[CN103746338](#) A 20140423 [A] (UNIV XI AN JIAOTONG, et al)
[A] 1-4
* 全文 *;
[CN103915821](#) A 20140709 [A] (XUJI ELECTRIC CO LTD, et al)
[A] 1-4
* 全文 *;
[WO2014190814](#) A1 20141204 [A] (NR ELECTRIC CO LTD [CN], et al)
[A] 1-4
* 全文 *;
[CN104410043](#) A 20150311 [X] (STATE GRID CORP CHINA, et al)
[X] 1-2
* 说明书第0032-0077段及图1 *

- PA - (A)
NANJING SAC AUTOMATION CO LTD
- TI - (A)
Implementation method for phase-shifting transformer differential **protection**
- AB - (A)
The invention discloses an implementation method for phase-shifting transformer

differential **protection**. The implementation method is characterized by comprising the following steps specifically: step SS1, collecting winding current of each side of a transformer in real time; step SS2, converting each winding current in the low voltage side into the high voltage side, and shifting to a step **SS3**; step **SS3**, calculating differential current according to the converted current; and step SS4, judging whether the differential current is higher than an action threshold or not, if so, cutting off the transformer by the differential **protection** action. The implementation method for the phase-shifting transformer differential **protection** is suitable for common electric transformers as well as phase-shifting transformers with multiple windings, random connection groups and random phase differences; and the implementation method has extremely high universality, and solves the problem that the existing phase-shifting transformers (including rectifier transformers) cannot realize the differential **protection** caused by difficulty in calculating the differential current.

6/10 © EPODOC / EPO

PN - [CN104638761](#) A 20150520

PNFP - CN104638761B B 20170412

PR - CN20141773886 20141215

AP - CN20141773886 20141215

DT - I

CT - || STSE (A)

[US2005273183](#) A1 20051208 [A] (CURT WALTER [US], et al)

[A] 1-6

* 全文 *

[CN101431254B](#) B 20110511 [A] (ZHEJIANG ELECTRIC POWER DESIGN INST, et al)

[A] 1-6

* 全文 *

CTNP - || STSE (A)

[XY] - 朱建文, "110kV南沙河变电站智能化改造研究", 《中国优秀博士学位论文全文数据库工程科技II辑》

[X] 1-2

* 第1-60页 *

[Y] 3

[Y] - 宋杰等, "基于协同测试系统的智能变电站GOOSE虚端子关联检测研究", 《电力系统保护与控制》

[Y] 3

* 第138-142页 *

CCA - [Y04S10/16](#) ; [Y02E60/723](#)

PA - (A)

NARI TECHNOLOGY DEV CO LTD; STATE GRID CORP CHINA; STATE GRID ANHUI ELECTRIC POWER CO; STATE GRID NARI NANJING CONTROL SYSTEM CO LTD

TI - (A)

Packet sensing and packet simulation verification based GOOSE (generic object oriented substation event) virtual terminal connection method

AB - (A)

The invention discloses a packet sensing and packet simulation verification based

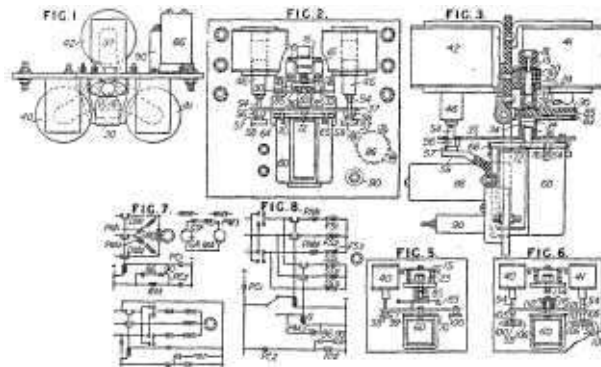
GOOSE (generic object oriented substation event) virtual terminal connection method and belongs to the technical field of automatic power system control. The method is characterized by including the following steps: SS1, sending GOOSE sending packet data from a sending end; SS2, modifying sensed data set data member status values according to test requirements and setting the maintenance status TEST as the status contrary to the original one; **SS3**, sending a GOOSE packet subjected to analog simulation, and verifying whether connection of a GOOSE virtual terminal is correct or incorrect from a receiving end. By the method, the GOOSE virtual terminal connection loop relation among devices such as a **protection** device, a measuring and controlling device, a **protection** measuring and controlling device, a merging unit and a smart terminal can be verified effectively, and meanwhile the problem about service without power-off for reconstruction and extension of smart substations is solved.

7/10 © EPODOC / EPO

- PN - [JP2000187946](#) A 20000704
- PR - JP19980363681 19981222
- AP - JP19980363681 19981222
- DT - I
- FI - G11B20/14&351Z
- FT - 5D044/BC04; 5D044/CC04; 5D044/DE32; 5D044/FG25; 5D044/GM11; 5D044/GM15; 5D044/GM26
- PA - VICTOR COMPANY OF JAPAN
- TI - SYNCHRONISM DETECTION **PROTECTION** CIRCUIT
- AB - PROBLEM TO BE SOLVED: To detect and protect a highly reliable synchronizing signal even when a disk medium recorded by a CLV(constant linear velocity) system is reproduced by a CAV(constant angular velocity) system. SOLUTION: A detection window WS3 is generated based on an estimated value AK of an interval of a synchronizing signal SS. The synchronizing signal **SS3** is detected based on the detective window WS3. A timing signal TS3 is generated from the detected synchronizing signal **SS3**. Then, an interval value BK between the timing signal TS3 and the last timing signal TS2 is measured. Then, the next detective window WS4 is generated based on the measured interval value BK. These operation are performed using a stable clock such as that of a crystal.

8/10 © EPODOC / EPO

- PN - [GB840840](#) A 19600713
- PR - US19570635394 19570122
- AP - GB19580021994 19580709
- DT - **
- CCI - [H01H71/44](#) ; [H02H7/085](#) ; [H02H7/0855](#)
- PA - OTIS ELEVATOR CO
- TI - Overload protective system for electric circuits
- AB - 840,840. Electrically-tripped (or



released) Switches;
electromagnetic switches;
protective cut-out systems;
control of motors. OTIS
ELEVATOR CO. July 9, 1958, No.
21994/58. Classes 38 (3) and 38
(5). An overload protective
system includes a device with
one or more operating coils and
a restraining coil arranged for
an inverse time-lag delay in the
restraining action. As shown in
Figs. 1 ... 3 the operating coils 40
... 42 attract plungers 46 which
are provided with adjustable
bolts 54 each passing through
one arm of a three-armed plate
37 so that the bolt heads 56
engage its underside. Resilient
bumpers 57 on the bolt heads 56
engage stops 58 which act as
pivots when only one or two of
the plungers 46 are operated. A
pivoted lever 30 is biased by a
spring 33 to engage a bumper 34
carried by a sleeve 36 which
rests at the centre of the plate
37. On overload, initial
movement of the plate lifts the
sleeve 36 until it engages the
head 74 of a stem 72 attached to
the armature 70 of the
restraining electromagnet 60.
The lever 30 carries contacts 85
which during the initial
movement disengage fixed
contacts 83 to interrupt the D.C.
supply to the coil 60 which is in
parallel with a capacitor 86 and
resistor 90 so that the
restraining coil voltage falls as
the capacitor discharges. When
the pull of the operating coil or
coils on the plate 37 overcomes
the pull of the coil 60, the lever
30 is moved up to strike a
plunger 26 carrying a contact
bridge 15 and a permanent
magnet 23. The magnet is thus

disengaged from a magnetizable bushing 24 and the bridge 15 disengages fixed contacts 16 to interrupt the supply. On de-energization the spring 33 tends to restore the lever 30 but the armature 70 engages one or more of three non-magnetic clips 64, 65, 66 since during operation the plate 37 moves the armature toward the particular coil or coils 40, 41, or 42 which causes operation. When the armature is restored to its central position the contacts 83, 85 are reclosed. The contacts 15, 16 are biased open by a spring 20 and are relatched by depressing a button 18 so that the magnet 23 engages the bushing 24. Only one or two operating coils may be used but the corresponding projections 58 are retained as pivots. Alternatively (Fig. 5) when only one operating coil is required, the plate 37 may be replaced by a bar 99 pivoted at 100. In a further arrangement (Fig. 6) the contacts 83, 85 are replaced by series-connected bridge contacts 105, one on an extension of each bolt 54, with co-operating fixed contacts 106. The lost motion between the plate 111 and the armature 70 is effected by a sleeve 115 on the plate and a washer 114 on a stud 110 fixed to the armature. The Specification also includes arrangements in which the system is used for the **protection** of motors particularly for lifts. In Fig. 7 the armature MA of a D. C. hoisting motor is supplied from a generator with an armature GA and series field winding GSF. The generator armature is driven by a three-phase induction motor having

speech store SS1, a parallel to serial converter PS1 and a 32-position switching memory ZOS1. Information from an incoming highway is written into the call store once per frame where it is stored under an address corresponding to its time channel 0-31. Under the instruction of central control there is stored in each position the switching memory information relating to which channel of which highway the information in the corresponding position of the speech store is to be switched. In operation the information in the speech stores can remain for up to one frame. During the frame the information is switched to the outgoing highways as follows. The switching memories ZOS1-28 are scanned in sequence for the channel 0, then channel 1 and so on up to channel 31. In the example shown when position 12 of switching memory 3 is read, it is noted that the connection is to channel 28 of highway 19. The information in position 28 of speech store 19 is then read out to parallel to serial converter PS3 and thence out on channel 12 of highway PCM-VF3. Similarly the information in position 12 of speech store SS3 is read out on channel 28 of highway 19 when position 28 of speech store 19 is read. From the above it can be seen that the same channel position is used on each highway pair for each two way transmission and that the switching unit is non-blocking. One way connections are catered for and data exchange between two computers is referred to. The invention is applied to the setting of information in the switching

memories, and the arrangement is such that the switching memory positions are switched from idle to a particular state or from a particular state to idle. Hence there are two types of central control instruction, a setting order and a resetting order both having the general form shown in Fig. 2(I), under ORDER, Confirmation and error replies are shown under reply. For all orders and replies relating to connections W is three bits and O. Position S is of three bits and indicates the type of order and type of connector, i. e. set or reset, two way or one way. In set orders, T, V, X, Z are each five bits and each pair give the address or a different switching memory position, e.g. by PCM-VF number and channel number. In reset orders, T, V give a switching memory address of X, Z the expected contents of that address before the reset order is operative. In operation and set order such as shown in Fig. 2 (II) is sent by central control to the switching unit, the Figure S = 6 indicating a two way connection and that the order is to cause the setting of the switching memories. Because it is a set order, it is known that the two memory positions whose addresses are contained in the order should be idle. A check is performed to confirm this and if the confirmation is forthcoming, ZOS address B is read into the ZOS position of address A and vice versa. A reply message as shown in Fig. 2(II) under reply is sent to central control, S<SP>1</SP> being given the same value as S. If either of the addressed memory positions are

not idle a reply as shown in Fig. 2 (III), is sent under a value of $S<SP>1</SP>$ different from the S of the set order, and the reply including the address of the "non" idle memory position together with its contents. A reset order for a two way connection is similar except that $S = 4$. The contents of ZOS position address A is checked to see that it contains ZOS address B and vice versa and if so then two positions are set to idle, and a confirmation message sent (Fig. 2 (iv)). If there is a non agreement error reply Fig. 2(v), is sent. In order to distinguish in the central control between confirmation and error replies, $S<SP>1</SP>$ has values 6, 4, 7, 5, for confirmation replies and 2, 0, 3, 1 for error replies and hence all error replies $S<SP>1</SP>$ binary values start with 0 and all confirmations with 1. Similar instructions are used for one way connections. Figs. 3 and 4 (not shown), show flow diagrams indicating how the above functions are carried out by the central control and the switching unit.

PN - [WO2005006156](#) A2 20050120

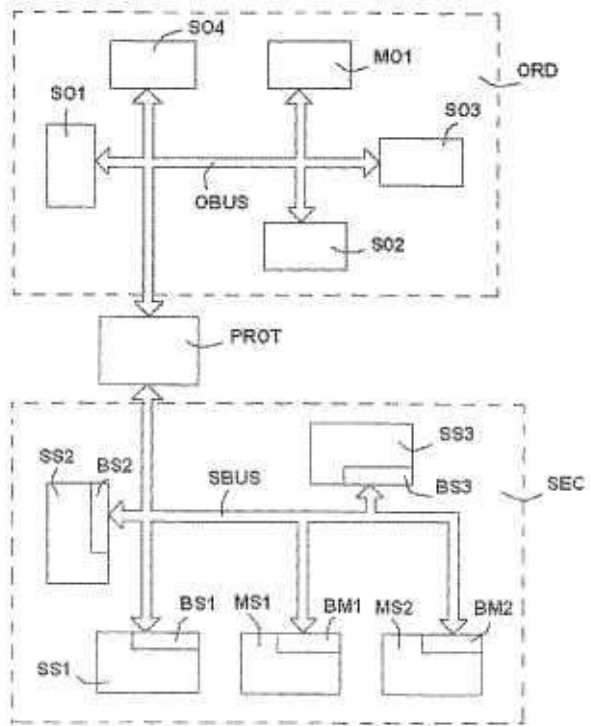
PNFP - WO2005006156 A3 20050630

PR - FR20030008371 20030709

AP - WO2004FR01775 20040708

DT - **

CT - |EP| ISR (A3)
[US6523118](#) B1 20030218
 [XAY] (BUER MARK LEONARD [US])
 [X] 1
 * column 1, line 1 - column 2, line 59 *
 * column 3, line 1 - column 5, line 42 *
 * figure 1 *
 [A] 4,6,7
 [Y] 2,3,5;
[US2002169968](#) A1 20021114
 [Y] (GAMMEL BERNDT [DE], et al)
 [Y] 2,3,5
 * paragraph [0008] -
 paragraph [0021] *
 * paragraph [0026] -
 paragraph [0031] *
 * figure 1 *;
[US2003048900](#) A1 20030313
 [XA] (KIM CHAN-YONG [KR], et al)
 [X] 1
 * paragraph [0008] -
 paragraph [0018] *
 * figure 2 *
 [A] 2-7;
[US5828753](#) A 19981027
 [A] (DAVIS DEREK L [US])
 [A] 1-7
 * column 2, line 9 - line 16 *
 * column 2, line 35 - column 5, line 16 *
 * figures 1,2 *;
[US2003005313](#) A1 20030102
 [A] (GAMMEL BERNDT [DE], et al)
 [A] 1-3
 * the whole document *;
[EP1030237](#) A1 20000823
 [A] (HEWLETT PACKARD CO [US])
 [A] 1
 * column 1, line 45 - column 3, line 6 *
 * column 3, line 35 - column 9,



line 53 *;
[US5933854](#) A 19990803
[A] (YOSHIMURA YOSHIMASA [JP])
[A] 1
* the whole document *

- CCI - [G06F21/72](#) ; [G06F21/85](#)
- PA - (A2 A3)
INNOVA CARD [FR]; DEHAMEL
ARNAUD [FR]; BERNARD BRUNO
[FR]; LHERMET FRANK [FR]
- TI - (A2 A3)
INTEGRATED CIRCUIT
COMPRISING AN ORDINARY
MODULE AND A SECURED
MODULE THAT ARE CONNECTED
VIA A PROTECTED LINE
- AB - (A2 A3)
The invention relates to an
integrated circuit comprising an
ordinary module ORD and a
secured module SEC that are
connected via an
interconnection link, said
secured module SEC comprising
at least one master element MS1,
MS2 and at least one slave
element SS1, SS2, **SS3** that are
connected via a secured bus
SBUS. In addition, this
interconnection link
incorporates a **protection**
module PROT that is connected
to an ordinary module ORD and
to the secured bus SBUS.