CLAIMS

1. A method for determining a first paging frame corresponding to a paging early indication (PEI), performed by a user equipment or a network device, comprising:

determining a difference between a system frame number of a paging frame where a page occasion (PO) monitored by the user equipment is located and a first value to be a system frame number of the first paging frame corresponding to the PEI, wherein the first value is determined according to a relative PO index of the PO monitored by the user equipment with respect to one or more POs corresponding to the PEI and a number of POs in one paging frame.

2. The method according to claim 1,

wherein the first value is $\left\lfloor {i_{PO}}/{N_S} \right\rfloor \times {T}/{N}$,

where $\lfloor \ \rfloor$ represents rounding down, i_{PO} represents a relative PO index of a PO monitored by the user equipment with respect to one or more POs corresponding to the PEI, N_S represents the number of POs in the one paging frame, T represents a paging cycle of the user equipment, and N represents a number of paging frames in one paging cycle of the user equipment.

3. The method according to claim 2, wherein

i_{PO} is determined by following formulas:

$$i_{PO} = ((UE_ID \bmod \mathrm{N}) \times \mathrm{N}_s + i_s) \bmod POnumPerPEI$$

$$i_s = floor(UE_ID / N) \bmod N_s$$

where UE_ID represents a user identifier, POnumPerPEI represents the number of POs corresponding to the PEI, $floor$ represents rounding down, and mod represents a modulo operation.

4. A user equipment, comprising:

a processing module configured to determine a difference between a system frame number of a paging frame where a page occasion (PO) monitored by the user equipment is located and a first value to be a system frame number of the first paging frame corresponding to a paging early indication (PEI), wherein the first value is determined according to a relative PO index of the PO monitored by the user equipment with respect to one or more POs corresponding to the PEI and a number of POs in one paging frame.

5. The user equipment according to claim 4,

wherein the first value is $\left\lfloor {i_{PO}}/{N_S} \right\rfloor \times {T}/{N}$,

where $\lfloor \ \rfloor$ represents rounding down, i_{PO} represents a relative PO index of a PO monitored

by the user equipment with respect to one or more POs corresponding to the PEI, N_S represents the number of POs in the one paging frame, T represents a paging cycle of the user equipment, and N represents a number of paging frames in one paging cycle of the user equipment.

6. The user equipment according to claim 5, wherein

i_{PO} is determined by following formulas:

$$i_{PO} = ((UE_ID \bmod N) \times N_s + i_s) \bmod POnumPerPEI$$

$$i_s = floor(UE_ID / N) \bmod N_s$$

where UE_ID represents a user identifier, POnumPerPEI represents the number of POs corresponding to the PEI, $floor$ represents rounding down, and mod represents a modulo operation.

7. A network device, comprising:

a processing module configured to determine a difference between a system frame number of a paging frame where a page occasion (PO) monitored by the user equipment is located and a first value to be a system frame number of the first paging frame corresponding to a paging early indication (PEI), wherein the first value is determined according to a relative PO index of the PO monitored by the user equipment with respect to one or more POs corresponding to the PEI and a number of POs in one paging frame.

8. The network device according to claim 7,

wherein the first value is $\left\lfloor {i_{PO}}/{N_S} \right\rfloor \times {T}/{N}$,

where $\lfloor \ \rfloor$ represents rounding down, i_{PO} represents a relative PO index of a PO monitored by the user equipment with respect to one or more POs corresponding to the PEI, N_S represents the number of POs in the one paging frame, T represents a paging cycle of the user equipment, and N represents a number of paging frames in one paging cycle of the user equipment.

9. The network device according to claim 8, wherein

i_{PO} is determined by following formulas:

$$i_{PO} = ((UE_ID \bmod N) \times N_s + i_s) \bmod POnumPerPEI$$

$$i_s = floor(UE_ID / N) \bmod N_s$$

where UE_ID represents a user identifier, POnumPerPEI represents the number of POs corresponding to the PEI, $floor$ represents rounding down, and mod represents a modulo operation.

10. A user equipment, comprising:

a processor; and

a memory configured to store computer programs;

wherein the processor is configured to execute the computer programs to:

determine a difference between a system frame number of a paging frame where a page occasion (PO) monitored by the user equipment is located and a first value to be a system frame number of the first paging frame corresponding to a paging early indication (PEI), wherein the first value is determined according to a relative PO index of the PO monitored by the user equipment with respect to one or more POs corresponding to the PEI and a number of POs in one paging frame.

11. The user equipment according to claim 10,

wherein the first value is $\left\lfloor {i_{PO}}/{N_S} \right\rfloor \times {T}/{N}$,

where $\lfloor \ \rfloor$ represents rounding down, i_{PO} represents a relative PO index of a PO monitored by the user equipment with respect to one or more POs corresponding to the PEI, N_S represents the number of POs in the one paging frame, T represents a paging cycle of the user equipment, and N represents a number of paging frames in one paging cycle of the user equipment.

12. The user equipment according to claim 11, wherein

i_{PO} is determined by following formulas:

$$i_{PO} = ((UE_ID \bmod N) \times N_s + i_s) \bmod POnumPerPEI$$

$$i_s = floor(UE_ID / N) \bmod N_s$$

where UE_ID represents a user identifier, POnumPerPEI represents the number of POs corresponding to the PEI, $floor$ represents rounding down, and mod represents a modulo operation.

13. A network device, comprising:

a processor; and

a memory configured to store computer programs;

wherein the processor is configured to execute the computer programs to:

determine a difference between a system frame number of a paging frame where a page occasion (PO) monitored by the user equipment is located and a first value to be a system frame number of the first paging frame corresponding to a paging early indication (PEI), wherein the first value is determined according to a relative PO index of the PO monitored by the user equipment with respect to one or more POs corresponding to the PEI and a number of POs in one paging frame.

14. The network device according to claim 13,

wherein the first value is $\left\lfloor i_{PO} / N_S \right\rfloor \times T / N$,

where $\lfloor \ \rfloor$ represents rounding down, i_{PO} represents a relative PO index of a PO monitored by the user equipment with respect to one or more POs corresponding to the PEI, N_S represents the number of POs in the one paging frame, T represents a paging cycle of the user equipment, and N represents a number of paging frames in one paging cycle of the user equipment.

15. The network device according to claim 14, wherein

i_{PO} is determined by following formulas:

$i_{PO} = ((UE_ID \bmod N) \times N_s + i_s) \bmod POnumPerPEI$

$i_s = floor(UE_ID / N) \bmod N_s$

where UE_ID represents a user identifier, POnumPerPEI represents the number of POs corresponding to the PEI, $floor$ represents rounding down, and mod represents a modulo operation.

16. A computer-readable storage medium, having stored therein instructions that, when invoked by a computer, cause the computer to execute:

determining a difference between a system frame number of a paging frame where a page occasion (PO) monitored by the user equipment is located and a first value to be a system frame number of the first paging frame corresponding to a paging early indication (PEI), wherein the first value is determined according to a relative PO index of the PO monitored by the user equipment with respect to one or more POs corresponding to the PEI and a number of POs in one paging frame.

17. The computer-readable storage medium according to claim 16,

wherein the first value is $\left\lfloor i_{PO} / N_S \right\rfloor \times T / N$,

where $\lfloor \ \rfloor$ represents rounding down, i_{PO} represents a relative PO index of a PO monitored by the user equipment with respect to one or more POs corresponding to the PEI, N_S represents the number of POs in the one paging frame, T represents a paging cycle of the user equipment, and N represents a number of paging frames in one paging cycle of the user equipment.

18. The computer-readable storage medium according to claim 17, wherein

i_{PO} is determined by following formulas:

$i_{PO} = ((UE_ID \bmod N) \times N_s + i_s) \bmod POnumPerPEI$

$i_s = floor(UE_ID / N) \bmod N_s$

where UE_ID represents a user identifier, POnumPerPEI represents the number of POs corresponding to the PEI, $floor$ represents rounding down, and mod represents a modulo

operation.