

CLAIMS

1. An apparatus for predicting a network event flood comprising:
an event rate detector for detecting rates of event emissions from one or more
5 devices;
an aggregator for producing an aggregate rate and an aggregate rate trend of said
rates of event emissions from a plurality of said devices;
a level generator for generating a plurality of levels comprising maximum acceptable
event rate values of a plurality of said aggregate rate trends over plural time periods;
10 a storage component for storing said plurality of levels;
a comparator for comparing a current aggregate rate trend with at least a selected one
of said levels; and
a signaller for signalling a predicted event flood responsive to said comparator
detecting that said current aggregate rate trend will exceed said at least a selected one of said
15 levels at a first point in time.
2. The apparatus according to claim 1 wherein said aggregator comprises an averager
for calculating an average event rate.
- 20 3. The apparatus according to claim 1 or claim 2 wherein said aggregator comprises a
statistical calculator for calculating a statistically-normalized aggregate rate or rate trend.
4. The apparatus according to claim 3 wherein said statistically-normalized aggregate
rate or rate trend defines a normalized trend.
- 25 5. The apparatus according to claim 4 wherein said normalized trend is calculated by a
least-squares method.
6. The apparatus according to any preceding claim wherein said plural time periods are
30 defined according to one or more of : times of day; days of week; days of month; or days or
year.

7. The apparatus according to any preceding claim, further comprising:
an ordering component responsive to said signaller for ordering a list of identifiers of
said devices in descending order from a device having at said first point in time a maximum
rate of event emissions to a device having at said first point in time a minimum rate of event
emissions.

8. The apparatus according to claim 7, further comprising a first selector for selecting
said device from said list having at said first point in time a maximum rate of event
emissions and identifying said device as a candidate device for placing in a flood protection
mode.

9. The apparatus according to claim 8, wherein said flood protection mode causes a
receiver to accept a reduced rate of event emissions from said device.

10. The apparatus according to claim 9, wherein said receiver comprises a network
monitor.

11. The apparatus according to claim 10, wherein said network monitor comprises a
probe.

12. The apparatus according to any of claims 8 to 11, further comprising a flood
protection control component for placing said candidate device in said flood protection mode
as a flood protected device.

13. The apparatus according to claim 12, further comprising:
a second selector for selecting a flood protected device having at a second point in
time a minimum rate of event emissions and identifying said device as a candidate device for
removal from said flood protection mode.

14. A method for predicting a network event flood comprising:
detecting, by an event rate detector, rates of event emissions from one or more
devices;

producing, by an aggregator, an aggregate rate and an aggregate rate trend of said rates of event emissions from a plurality of said devices;

generating, by a level generator, a plurality of levels comprising maximum acceptable event rate values of a plurality of said aggregate rate trends over plural time periods;

storing, by a storage component, said plurality of levels;

comparing, by a comparator, a current aggregate rate trend with at least a selected one of said levels; and

signalling, by a signaller, a predicted event flood responsive to said comparator detecting that said current aggregate rate trend will exceed said at least a selected one of said levels at a first point in time.

15. The method according to claim 14 wherein said step of aggregating comprises using an averager for calculating an average event rate.

16. The method according to claim 14 or claim 15 wherein said step of aggregating comprises using a statistical calculator for calculating a statistically-normalized aggregate rate or rate trend.

17. The method according to claim 16 wherein said statistically-normalized aggregate rate or rate trend defines a normalized trend.

18. The method according to claim 17 wherein said normalized trend is calculated by a least-squares method.

19. The method according to any of claims 14 to 18 wherein said plural time periods are defined according to one or more of : times of day; days of week; days of month; or days or year.

20. The method according to any of claims 14 to 19, further comprising a step of: responsive to said signaller, ordering by an ordering component a list of identifiers of said devices in descending order from a device having at said first point in time a

maximum rate of event emissions to a device having at said first point in time a minimum rate of event emissions.

21. The method according to claim 20, further comprising a step of selecting said device from said list having at said first point in time a maximum rate of event emissions and identifying said device as a candidate device for placing in a flood protection mode.

22. The method according to claim 21, wherein said flood protection mode causes a receiver to accept a reduced rate of event emissions from said device.

23. The method according to claim 22, wherein said receiver comprises a network monitor.

24. The method according to claim 23, wherein said network monitor comprises a probe.

25. The method according to any of claims 21 to 24, further comprising placing, by a flood protection control component, said candidate device in said flood protection mode as a flood protected device.

26. The method according to claim 25, further comprising a step of:
selecting a flood protected device having at a second point in time a minimum rate of event emissions and identifying said device as a candidate device for removal from said flood protection mode.

27. A computer program comprising computer program code stored on a computer readable medium to, when loaded into a computer system and executed thereon, cause said computer system to perform all the steps of a method according to any of claims 14 to 26.

CLAIMS

1. An apparatus for predicting a network event flood comprising:
 - an event rate detector for detecting rates of event emissions from one or more devices;
 - an aggregator for producing an aggregate rate and an aggregate rate trend of said rates of event emissions from a plurality of said devices;
 - a level generator for generating a plurality of levels comprising maximum acceptable event rate values of a plurality of said aggregate rate trends over plural time periods;
 - a storage component for storing said plurality of levels;
 - a comparator for comparing a current aggregate rate trend with at least a selected one of said levels; and
 - a signaller for signalling a predicted event flood responsive to said comparator detecting that said current aggregate rate trend will exceed said at least a selected one of said levels at a first point in time.
2. The apparatus according to claim 1 wherein said aggregator comprises an averager for calculating an average event rate.
3. The apparatus according to claim 1 or claim 2 wherein said aggregator comprises a statistical calculator for calculating a statistically-normalized aggregate rate or rate trend.
4. The apparatus according to any preceding claim, further comprising:
 - an ordering component responsive to said signaller for ordering a list of identifiers of said devices in descending order from a device having at said first point in time a maximum rate of event emissions to a device having at said first point in time a minimum rate of event emissions.
5. The apparatus according to claim 4, further comprising a first selector for selecting said device from said list having at said first point in time a maximum rate of event emissions and identifying said device as a candidate device for placing in a flood protection mode.
6. The apparatus according to claim 5, wherein said flood protection mode causes a receiver to accept a reduced rate of event emissions from said device.
7. The apparatus according to claim 6, wherein said receiver comprises a network monitor or a probe.

8. The apparatus according to any one of claims 5 to 7, further comprising a flood protection control component for placing said candidate device in said flood protection mode as a flood protected device.
9. The apparatus according to claim 8, further comprising:
 - a second selector for selecting a flood protected device having at a second point in time a minimum rate of event emissions and identifying said device as a candidate device for removal from said flood protection mode.
10. A method for predicting a network event flood comprising:
 - detecting, by an event rate detector, rates of event emissions from one or more producing, by an aggregator, an aggregate rate and an aggregate rate trend of said rates of event emissions from a plurality of said devices;
 - generating, by a level generator, a plurality of levels comprising maximum acceptable event rate values of a plurality of said aggregate rate trends over plural time periods;
 - storing, by a storage component, said plurality of levels;
 - comparing, by a comparator, a current aggregate rate trend with at least a selected one of said levels; and
 - signalling, by a signaller, a predicted event flood responsive to said comparator detecting that said current aggregate rate trend will exceed said at least a selected one of said levels at a first point in time.
11. The method according to claim 10 wherein said step of aggregating comprises using an averager for calculating an average event rate.
12. The method according to any one of claims 10 to 11 wherein said plural time periods are defined according to one or more of : times of day; days of week; days of month; or days or year.
13. The method according to any one of claims 10 to 12, further comprising a step of: responsive to said signaller, ordering by an ordering component a list of identifiers of said devices in descending order from a device having at said first point in time a maximum rate of event emissions to a device having at said first point in time a minimum rate of event emissions.
14. The method according to claim 13, further comprising a step of selecting said device from said list having at said first point in time a maximum rate of event emissions and identifying said device as a candidate device for placing in a flood protection mode.

15. The method according to claim 14, wherein said flood protection mode causes a receiver to accept a reduced rate of event emissions from said device.
16. The method according to claim 15, wherein said receiver comprises a network monitor.
17. The method according to any one of claims 14 to 16, further comprising placing, by a flood protection control component, said candidate device in said flood protection mode as a flood protected device.
18. The method according to claim 17, further comprising a step of: selecting a flood protected device having at a second point in time a minimum rate of event emissions and identifying said device as a candidate device for removal from said flood protection mode.
19. A computer program comprising computer program code stored on a computer readable medium to, when loaded into a computer system and executed thereon, cause said computer system to perform all the steps of a method according to any of claims 10 to 18.