

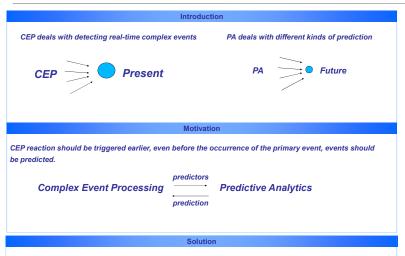
Gabriella Tóth, <u>Lajos Jenő Fülöp</u>, Árpád Beszédes, Tibor Gyimóthy Department Of Software Engineering, University of Szeged flajos@inf.u-szeged.hu

László Vidács, RGAI, Hungarian Academy of Sciences

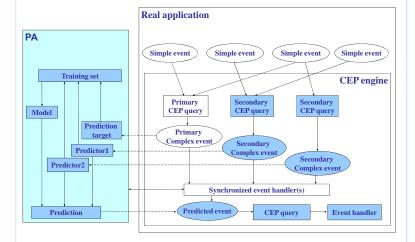


Hunor Demeter, Lóránt Farkas, Nokia Siemens Networks, Hungary hunor.demeter@nsn.com

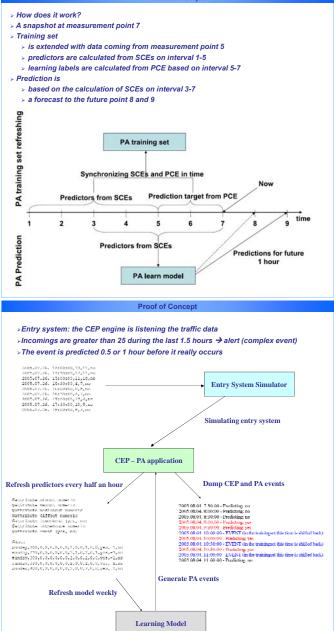
## Complex Event Processing Synergies with Predictive Analytics



- >By the connection of CEP and PA, complex events can be predicted
- >Initial CEP application is represented by the white boxes and ellipses
- »A certain complex event can be detected with the help of CEP
- >This event is called <u>primary complex event (PCE)</u>, while the related query is called <u>primary CEP</u> query
- > The CEP engine also produces the predictors (secondary complex events, SCE)
- > The SCEs are transmitted physically by the event handler
- >The PCE is the target of the prediction



- > Training set is extended based on the earlier defined predictors (SCEs) and the prediction target (PCE)
- >Learning model is periodically refreshed based on the currently extended training set
- »PA gives a prediction for the PCE at a later time
- > Prediction is sent back to the CEP engine
- >The CEP engine generates the new (predicted) PCE event



- > Success = correct prediction in 1 hour
- > 93.15% precision
- > 92.23% recall

## Reference

Lajos Jenő Fülöp, Gabriella Tóth, Róbert Rácz, János Pánczél, Tamás Gergely, Árpád Beszédes and Lóránt Farkas: Survey on Complex Event Processing and Predictive Analytics. Technical report, 2010

www.inf.u-szeged.hu/~gtoth/research/cep\_pa\_tech2010.pdf