

## High level summary

JP Vasseur is a Cisco Distinguished Engineer where he works on IP/MPLS architecture, Traffic Engineering, network recovery and the Internet of Things/Sensor networks. Before joining Cisco, he worked for several Service Providers in large multi-protocol environments. He is an active member of the IETF (co-author of more than 30 IETF RFCs), co-chair of the IETF PCE (Path Computation Element) and the ROLL (Routing Over Low power and Lossy networks (ROLL) Working Groups. JP is also the chair of the Technology Advisory Board of the IPSO (IP for Smart Object Alliance).



JP is a regular speaker at various international conferences; he is involved in various research projects in the area of IP/Sensor Networks and the member of a number of Technical Program Committees. He has filed more than 100 patents in the area of IP/MPLS and Sensor Networks.

Jean Philippe was exceptionally involved in SENSORCOMM IARIA activities

- SENSORCOMM2007: Tutorial: "Why IP for Smart Object ?" – Spain
- SENSORCOMM 2008: Keynote Speaker: "The Internet of Things: What if objects talked to each other" – France
- SENSORCOMM 2009: General Chair
- SENSORCOMM 2010: Advisory Committee and Keynote Speaker

He is the coauthor of "Network Recovery" (Morgan Kaufmann, July 2004), "Definitive MPLS Network Designs" (Cisco Press, March 2005) and "Interconnecting Smart Objects with IP: The next Internet" (Morgan Kauffman, May 2010 – see [www.thenextinternet.org](http://www.thenextinternet.org)).

## Area of Expertise

*IPv4 and IPv6, Routing, Quality of Service, Traffic Engineering, Network Recovery, Signaling, IP Smart Object Networks/Internet of Things (sensor/actuator).*

## Standardization

**RFC 4105:** *Requirements for Inter-Area MPLS Traffic Engineering*

**RFC 4090:** *Fast Reroute Extensions to RSVP-TE for LSP Tunnels*

**RFC 4216:** *MPLS Inter-Autonomous System (AS) Traffic Engineering (TE) Requirements*

**RFC 4420:** *Encoding of Attributes for Multiprotocol Label Switching (MPLS) Label Switched Path (LSP) Establishment Using Resource ReserVation Protocol-Traffic Engineering (RSVP-TE)*

**RFC 4561:** *Definition of a Record Route Object (RRO) Node-Id Sub-Object*

**RFC 4655:** *A Path Computation Element (PCE)-Based Architecture*

**RFC 4726:** *A Framework for Inter-Domain Multiprotocol Label Switching Traffic Engineering*

**RFC 4736:** *Reoptimization of Multiprotocol Label Switching (MPLS) Traffic Engineering (TE) Loosely Routed Label Switched Path (LSP)*

**RFC 4829:** *Label Switched Path (LSP) Preemption Policies for MPLS Traffic Engineering*

**RFC 4970:** *Extensions to OSPF for Advertising Optional Router Capabilities*

**RFC 4971:** *Intermediate System to Intermediate System (IS-IS) Extensions for Advertising Router Information*

**RFC 4972:** *Routing Extensions for Discovery of Multiprotocol (MPLS) Label Switch Router (LSR) Traffic Engineering (TE) Mesh Membership*

**RFC 5029:** *Definition of an IS-IS Link Attribute Sub-TLV*

**RFC 5073:** *IGP Routing Protocol Extensions for Discovery of Traffic Engineering Node Capabilities*

**RFC 5088:** *OSPF Protocol Extensions for Path Computation Element (PCE) Discovery*

**RFC 5089:** *IS-IS Protocol Extensions for Path Computation Element (PCE) Discovery*

**RFC 5150:** *Label Switched Path Stitching with Generalized Multiprotocol Label Switching Traffic Engineering (GMPLS TE)*

**RFC 5151:** *Inter-Domain MPLS and GMPLS Traffic Engineering -- Resource Reservation Protocol-Traffic Engineering (RSVP-TE) Extensions*

**RFC 5152:** *A Per-Domain Path Computation Method for Establishing Inter-Domain Traffic Engineering (TE) Label Switched Paths (LSPs)*

**RFC 5298:** *Analysis of Inter-Domain Label Switched Path (LSP) Recovery*

**RFC 5330:** *A Link-Type sub-TLV to Convey the Number of Traffic Engineering Label Switched Paths Signalled with Zero Reserved Bandwidth across a Link*

**RFC 5440:** *Path Computation Element (PCE) Communication Protocol (PCEP)*

**RFC 5441:** *A Backward-Recursive PCE-Based Computation (BRPC) Procedure to Compute Shortest Constrained Inter-Domain Traffic Engineering Label Switched Paths*

**RFC 5468:** *Performance Analysis of Inter-Domain Path Computation Methodologies*

**RFC 5520:** *Preserving Topology Confidentiality in Inter-Domain Path Computation Using a Path-Key-Based Mechanism*

**RFC 5541:** *Encoding of Objective Functions in the Path Computation Element Communication Protocol (PCEP)*

**RFC 5553:** *Resource Reservation Protocol (RSVP) Extensions for Path Key Support*

**Active Working Group Documents:**

**draft-ietf-ccamp-mpls-graceful-shutdown:** *Graceful Shutdown in MPLS and Generalized MPLS Traffic Engineering Networks*

**draft-ietf-pce-monitoring:** *A set of monitoring tools for Path Computation Element based Architecture*

**draft-ietf-mpls-soft-preemption:** *MPLS Traffic Engineering Soft Preemption*

**draft-ietf-mpls-gmpls-lsp-reroute:** *PathErr Message Triggered MPLS and GMPLS LSP Reroute*

**draft-ietf-mpls-3209-patherr:** *Node behavior upon originating and receiving Resource Reservation Protocol (RSVP) Path Error message*

**draft-ietf-roll-rpl:** *RPL: IPv6 Routing Protocol for Low power and Lossy Networks*

**draft-ietf-roll-routing-metrics:** *Routing Metrics used for Path Calculation in Low Power and Lossy Networks*

**draft-ietf-roll-terminology:** *Terminology in Low power And Lossy Networks*

**draft-ietf-6lowpan-usecases:** *Design and Application Spaces for 6LoWPANs*

## Patents

**Inventor of 108 patents in TCP/IP, Routing, QoS, MPLS, sensor networks, ad-hoc networks, Traffic Engineering.**

## Books

["Network Recovery: Protection and Restoration of Optical, SONET-SDH, IP, and MPLS \(The Morgan Kaufmann Series in Networking\)"](#) - Jean-Philippe Vasseur, Mario Pickavet, and Piet Demeester - Morgan Kaufmann - July 2004, 544 pages

["Definitive MPLS Network Designs"](#) - Jean-Philippe Vasseur, Jim Guichard et Francois Le Faucheur - Cisco Press - March 2005, 552 Pages

["Interconnecting Smart Objects with IP: The next Internet"](#) - Jean-Philippe Vasseur, Adam Dunkels - Morgan Kaufman - May 2010, 400 pages.

## Publications

- *"The IP/MPLS over ASON/GMPLS test bed of the IST project LION"*, C. Cavazzoni, V. Barosco, A. D'Allessandro, A. Manzalini, S. Milani, G. Ricucci, R. Morro, R. Geerdsen, U. Hartmer, G. Lehr, U. Pauluhn, S. Wevering, D. Pendarakis, N. Wauters, R. Gigantino, JP Vasseur, K. Shimano, G. Monari, A. Salvioni, December 2003.

- *"Local recovery solutions from multi-link failures in MPLS-TE networks with probable failure patterns"*, Marco Tacca, Kai Wu, Andrea Fumagalli, Jean-Philippe Vasseur *Globecom 2004, Dallas, TX, Dec 2004*

- *"Benefits of GMPLS for multilayer recovery"* *IEEEGMPLS Special Edition*, B. Puype, Jean-Philippe Vasseur, Adelbert Groebbens, Sophie De Maesschalck, Didier Colle, Ilse Lievens, Mario Pickavet, and Piet Demeester, July 2005

- *"A New Distributed Dynamic Bandwidth Reservation Mechanism to Improve Resource Utilization: Simulation and Analysis on Real Network and Traffic Scenarios"*, S. Dasgupta, J. C. de Oliveira, and J.-P. Vasseur *in the Proceedings of IEEE INFOCOM 2006, Barcelona, Spain, April 23-29, 2006.*

- *"Local Detection and Recovery from Multi-Failure Patterns in MPLS-TE Networks"*, Marco Tacca, Kai Wu, Andrea Fumagalli, Jean-Philippe Vasseur, *ICC 2006, Istanbul, Turkey, June 2006*

- *"Path-Computation-Element- Based Architecture for Interdomain MPLS/GMPLS*

*Traffic Engineering: Overview and Performance*", S. Dasgupta, **J. C. de Oliveira**, and J.-P.Vasseur , in *IEEE Network, Special Issue on Network Systems Architecture, vol. 21(4)*, pp. 38-45, July/August 2007.

- *"Trend Based Bandwidth Provisioning: An Online Approach for Traffic Engineered Tunnels"*, *Proceedings of the Next Generation Internet Networks (Euro-NGI 2008)*, S. Dasgupta, J. C. de Oliveira, and J.-P.Vasseur, April 2008

- *"Dynamic Traffic Engineering for Mixed Traffic on International Networks"*, S. Dasgupta, J. C. de Oliveira, and J.-P.Vasseur, in *Computer Networks (Elsevier)*, vol. 52(11), pp. 2237-2258, August 2008.

- *"A Performance Study of IP and MPLS Traffic Engineering Techniques under Traffic Variations"*, S. Dasgupta, J. C. de Oliveira, and J.-P.Vasseur ,*Proceedings of the IEEE Globecom 2007, Washington, DC, November 26-30, 2007.*

- *"A Queueing Model Framework of PCE-based Inter-area Path Computation, Infocom 2009*, Juanjuan Yu1 , Yue He1 , Kai Wu1 , Marco Tacca1 , Andrea Fumagalli1 , and Jean-Phillippe Vasseur, Apr 2009

- **Technical committee member and reviewer in Sigcomm, IEEE, DRCN, Buildsys, ...**

## **Close collaboration and support of Several PHD Thesis**

### **International conferences**

- MPLS World Congress (Paris)
- MPLS 2002, 2003 (Washington)
- Technical committee member :
  - WiMan: First International Workshop on Wireless Mesh and Ad Hoc Networks,
  - Working Group member of the Wireless Subnet Working of GENI (<http://www.geni.net/index.php>)
  - IP+Optical networks
  - DRCN: Designing Reliable Communication Networks
  - iPOP (IP+Optical) 2009
- Co-editor of JCN
- « General Chair » of Sensorcomm 2008 and Technical Committee Member of Sensorcom 2009 et 2010.
- Co-chair in a number of technical committees and conferences

### **Involvement in International Alliances**

- Co-funder of the IPSO Alliance (IP for Smart Objects) - [www.ipso-alliance.org](http://www.ipso-alliance.org)

- Member of the M2M (Machine to Machine) ETSI Working Group