## ND Prefix Robustness Improvements draft-vv-6man-nd-prefix-robustness-02

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## Background & Status

- Study initiated in the context of first-hop analysis
  - Looking at cases of IPv6 instability in real networks
- Eventually, attention shifted to Neighbor Discovery and the cases that may lead to network prefixes invalidity
- Specific focus is on the multi-homing, multi-prefix scenario
  - Other cases are also analyzed for the sake of completeness
- Version -02 submitted on March 5<sup>th</sup>
- Main changes with respect to version -01:
  - Reviewed section 3 Problem scenarios
  - Reviewed section 5 Solutions
  - Added section 5.8 to link the proposed solutions to the extensions discussed in section 6
  - Done some editorial adjustments and corrections.
- Feedback, comments, criticism... much appreciated.

## Coping with Prefix Invalidity - Options



## Solutions Dependency and Proposal for Extensions

			#	Standard modifications	Change/Extension
		1	6.1	Prefer default router that advertise prefix used for source address chosen	sec 6.3.6 of ND
			6.2	Deprecate PIOs if prefix source is lost (with optional dampening)	sec 4.2, 5.1 of SLAAC
#	Solutions	//.		Do not deprecate default routers,	G-4/5 of RFC 7084
5.1	MHMP support		6.7	deprecate PIOs	(CPE requirements)
5.2	Provider lost in MHMP		6.2	Mandatory deprecation of changed	
5.7	Routers' LLA change	$\leq$	0.5	prefixes	SEC 4.1 OF SLAAC
5.4	Planned router outage	$\rightarrow$	6.4	Mandatory deprecation on shutdown	sec 6.2.5, 6.2.8 of ND
5.3	Abrupt configuration change		6.6	Synchronization flag in RA	sec 4.2, 6.2.3, 6.3.4
5.5	Abrupt router outage		0.0	(all information is in this RA)	of ND
5.6	Abrupt hardware replacement		6.5	Requirement for prefixes storage in non-volatile memory	sec 5.7 of SLAAC
			6.8	RA for faster detection of stale default router	sec 6.3.7 of ND
			6.9	Clean orphaned prefixes after default router list change	sec 6.3.6 of ND