

Don't Stop Receiving: Ensuring Availability of Critical Services on Compromised Mobile Devices

Tom Van Eyck¹, Stefan More², Florian Draschbacher², Sam Michiels¹, Danny Hughes¹

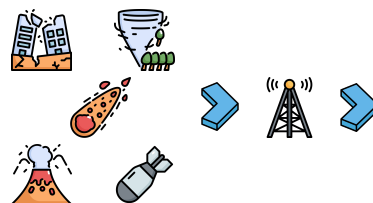
¹ DISTRINET, KU Leuven, Leuven, Belgium

² ISEC, Graz University of Technology and A-SIT, Graz, Austria



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Wireless Emergency Alerts



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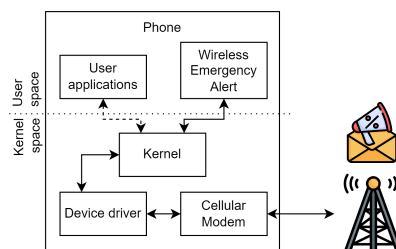
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Wireless Emergency Alerts

Are supposed to be always available

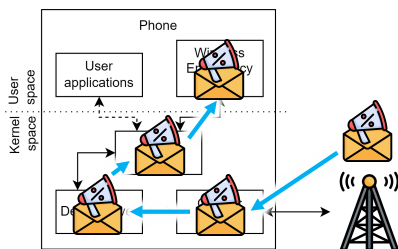
They are **not**

3



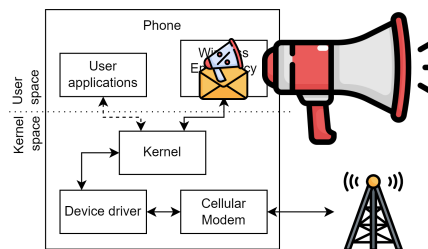
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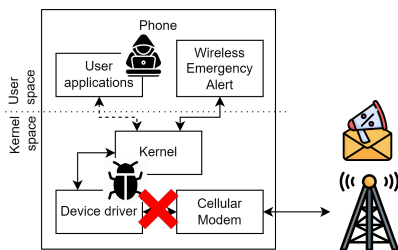
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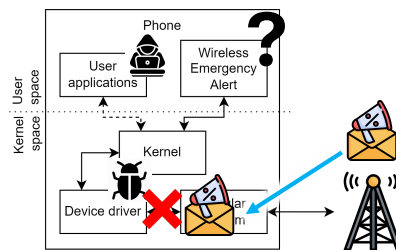
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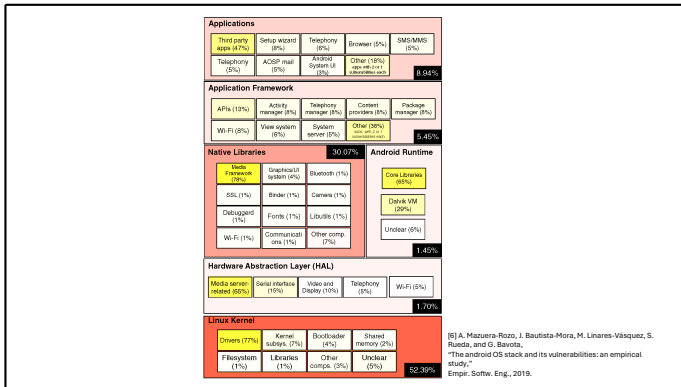


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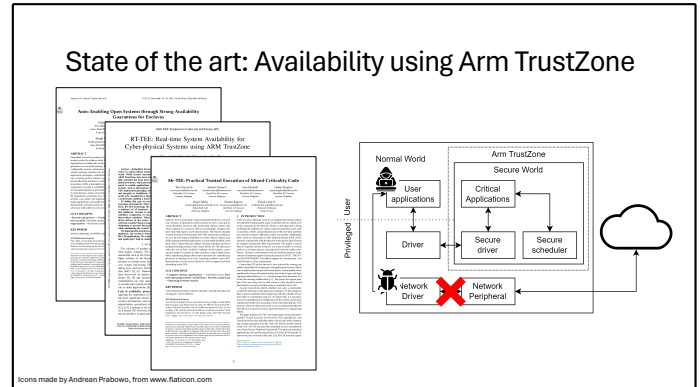
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IEEE NCA 25
Tom Van Eyck et al.



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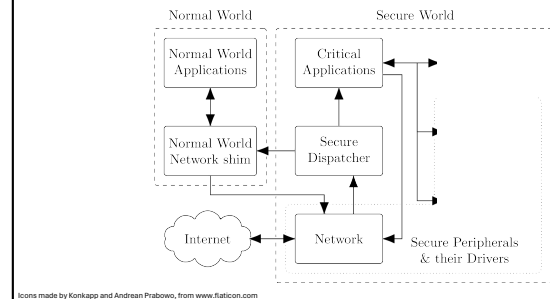
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Our contributions

1. Guarantee of delivery
 1. Guaranteed Network access
 2. Preventing Denial of Service
2. Ensuring User Interaction
3. Support User Authentication (Multi-Factor Authentication)

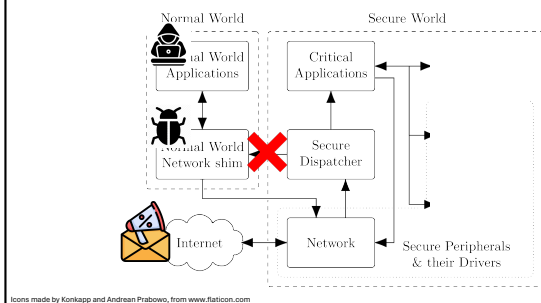
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Guaranteeing network access



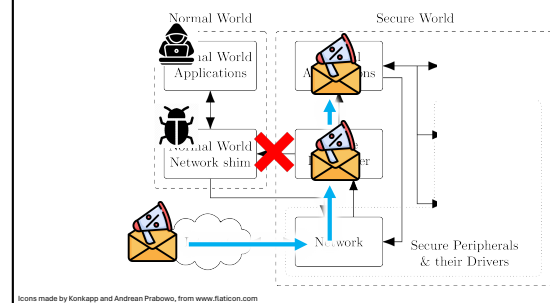
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Guaranteeing network access



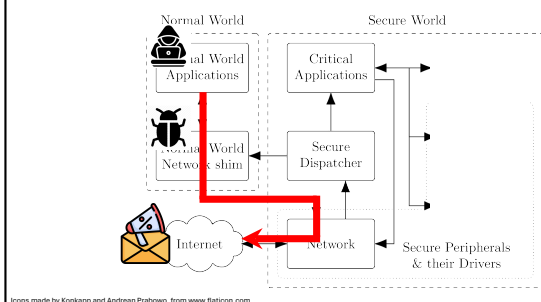
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Guaranteeing network access



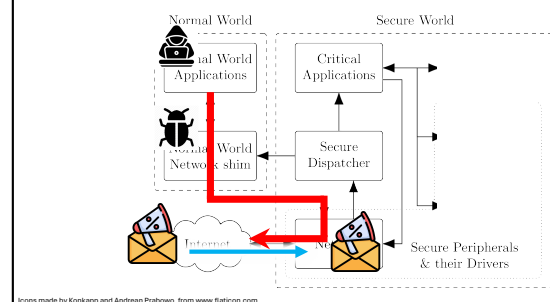
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Preventing Denial of Service



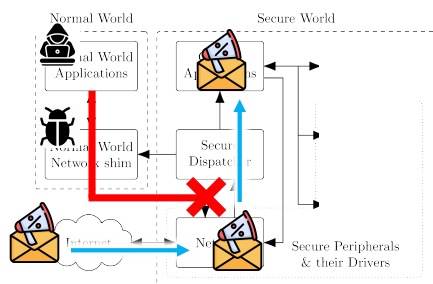
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Preventing Denial of Service



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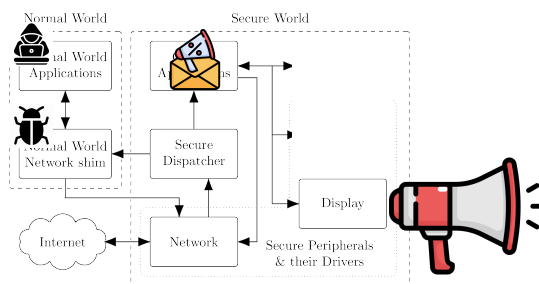
Preventing Denial of Service



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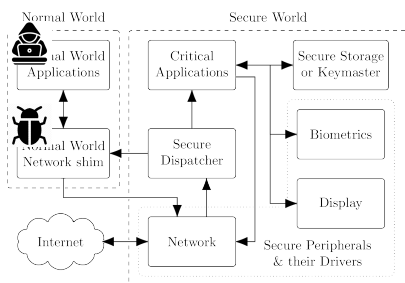
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Ensuring user interaction



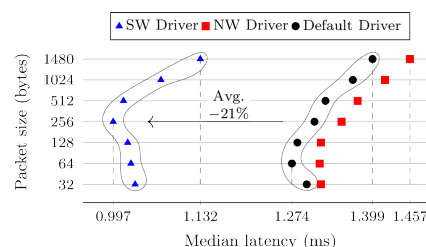
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Support user authentication



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Shared network latency



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Shared network throughput

		Normal World		Secure World	
		Default	Ours	Default	Ours
Tx	TCP (Mbit/s)	193	188	119	
	UDP (Mbit/s)	78	63	62	
Rx	TCP (Mbit/s)	280	22	59	
	UDP (Mbit/s)	107	0.876	0.778	

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Source code: <https://github.com/kuleuven-be/distrinet/taskforces/nes/dont-stop-receiving>

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