TSG RAN Meeting #24 **RP-040227**
Seoul, Korea, 2 - 4 June 2004

Title **CRs (Rel-5 and Rel-6 Category A) to TS 25.942 for the introduction of Rational on test parameters for UE adjacent channel selectivity**
Source **TSG RAN WG4**
Agenda Item **7.5.5**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-040185	25.942	015		F	Rel-5	5.2.0	Rational on test parameters for UE adjacent channel selectivity	TEI5
R4-040186	25.942	016		A	Rel-6	6.2.0	Rational on test parameters for UE adjacent channel selectivity	TEI5

3GPP TSG RAN WG4 (Radio) Meeting #31 **R4-040185**

Beijing, China 10 - 14 May 2004

CR-Form-v7

CHANGE REQUEST

⌘ **25.942** **CR** **015** ⌘ **rev** ⌘ Current version: **5.2.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Rational on test parameters for UE adjacent channel selectivity
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/05/2004
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Additional UE ACS test parameters were introduced in 25.101 at RAN4#30 for REL-5. Rationals behind the new Case 2 test parameter on I_{oac} should be included in TR 25.942.
Summary of change:	⌘	Simulation scenarios and results are introduced.
Consequences if not approved:	⌘	No rationals behind the additional case 2 test parameters on I_{oac} in 25.942.

Clauses affected:	⌘	New chapter 8.1.5 introduced.

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	Equivalent CRs in other Releases: CR016 cat. A to 25.942 v6.2.0

8.1.5 Rational on test parameters for UE adjacent channel selectivity

Adjacent Channel Selectivity (ACS) is a measure of a receiver's ability to receive a W-CDMA signal at its assigned channel frequency in the presence of an adjacent channel signal at a given frequency offset from the centre frequency of the assigned channel. ACS is the ratio of the receive filter attenuation on the assigned channel frequency to the receive filter attenuation on the adjacent channel(s).

However it is not possible to directly measure the ACS, instead the lower and upper range of test parameters must be chosen where the BER shall not exceed 0.001. The simulation scenarios and results leading to the Case 2 test parameter on I_{oac} in [2] are then presented in this section.

8.1.5.1 Macro / Micro Scenario

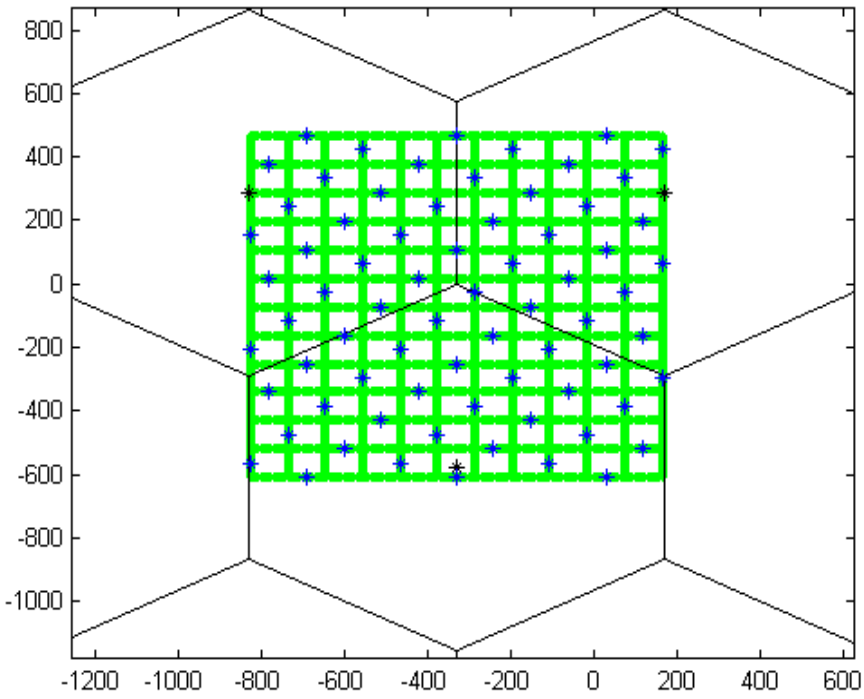
The Macro/Micro cell plan is based on chapter 5.1.3 as also shown in Figure 27a. Only the macro layer was simulated. For the micro BS, a constant total BS output power is assumed. Results logged only from the 3 macro cells overlapping with the micro area. 72 Micro BS are within an area of 1km x 1km.

Macro antenna pattern	Omnidirectional
Macro antenna gain	11 dBi
Micro antenna gain	11 dBi
Number of macro BS	19
Wrap around	yes
Cell radius	577 m

Path loss (towards macro BS)	15.3+37.6log(d) [d] = m
MCL, macro	70 dB
MCL, micro	53 dB
Std of the logn fading	10 dB
Correlation between sites	0.5
Decorrelation distance	0 m
Downlink orthogonality	0.2
UE noise figure	9 dB
ACIR until switched off	33 dB (excluding scenarios with mask)

Max BS power	20 W
Common Channel power	2 W
Max power per link	1 W
Max #links in active set	2
SoHO window	3 dB
CIR target	-18.98 dB (12.2 kbps, Eb/N0 = 6 dB)
Dropping threshold	-19.48 dB (Quality-based dropping)

Figure 27a



Simulation strategy: Snap-Shots.
Users are randomly placed over the system. If users in are in outage, they are removed one-by-one. If the BS is overloaded by means of power, remove a user, which has experienced the BS in question as "best server during call set-up" (remove one user at a time). After each action, find a balanced situation and continue to remove more users if needed.

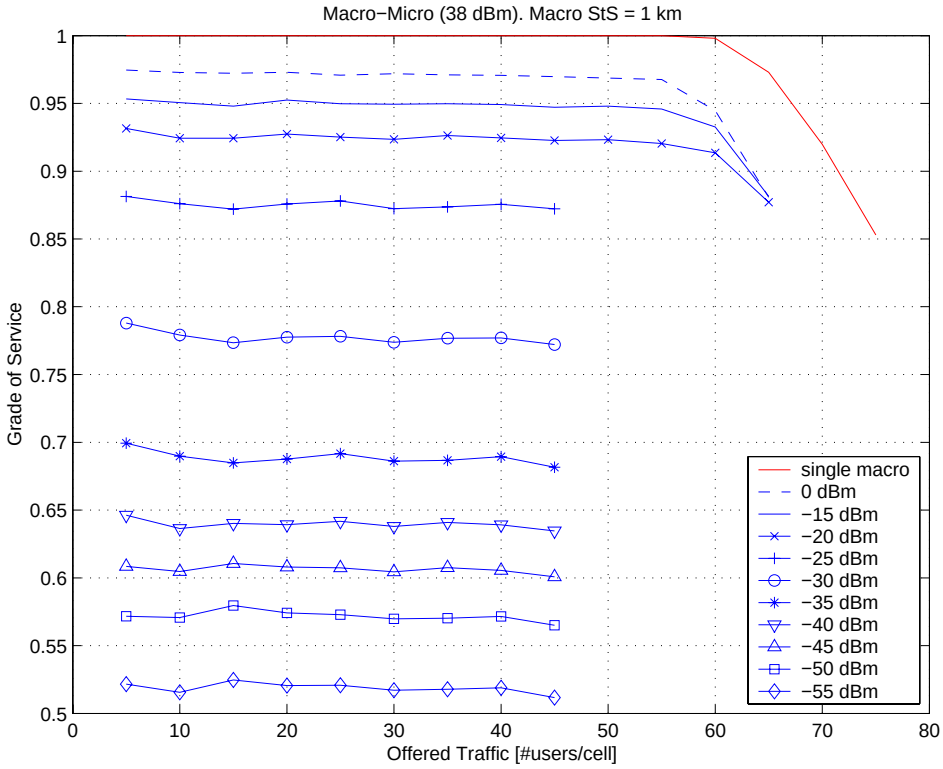
Grade-of-service is obtained in the end when no users are in outage, and all BS are below 20 W (GoS = #users left in the system / #users in the beginning).

8.1.5.2 OnOff Characteristic

All simulation results under this chapter are based on the assumption that if the experienced ACI is higher than the investigated value, the call will be dropped due to unknown characteristics of UE when received ACI exceeds a particular one under investigation.

8.1.5.2.1 Macro-Micro (38dBm) with UE ACS OnOff Characteristic

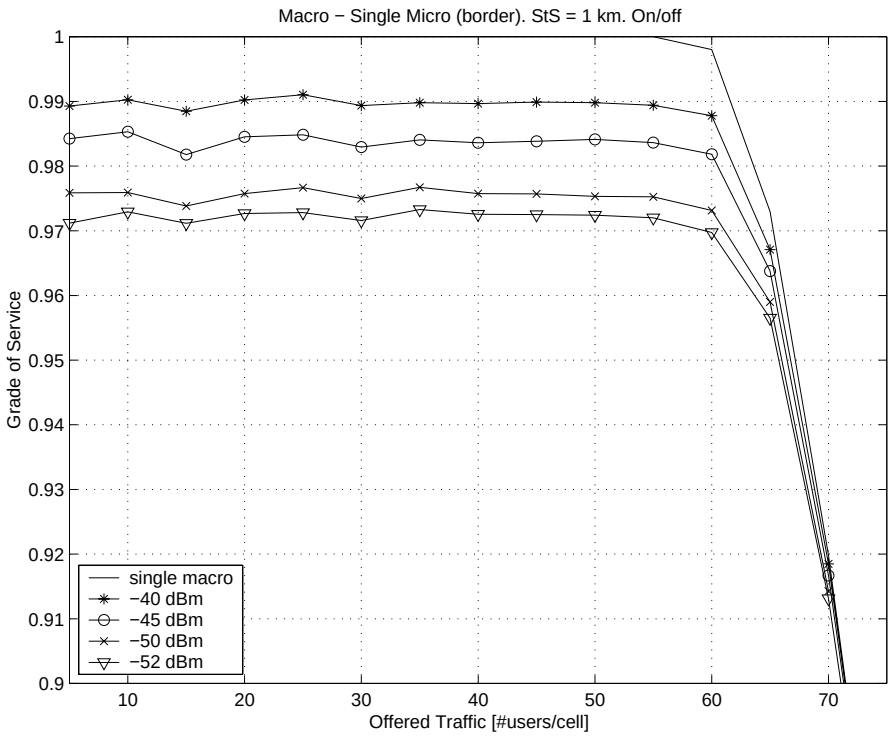
Figure 27b



8.1.5.2.2 Macro- Single Micro (38dBm) with UE ACS OnOff Characteristic

The macro-Micro cell plan in chapter 5.1.3 is the worst case and highly pessimistic, therefore macro-micro scenario was also simulated with only one micro in the macro cell grid. Results collected from all three macro cells.

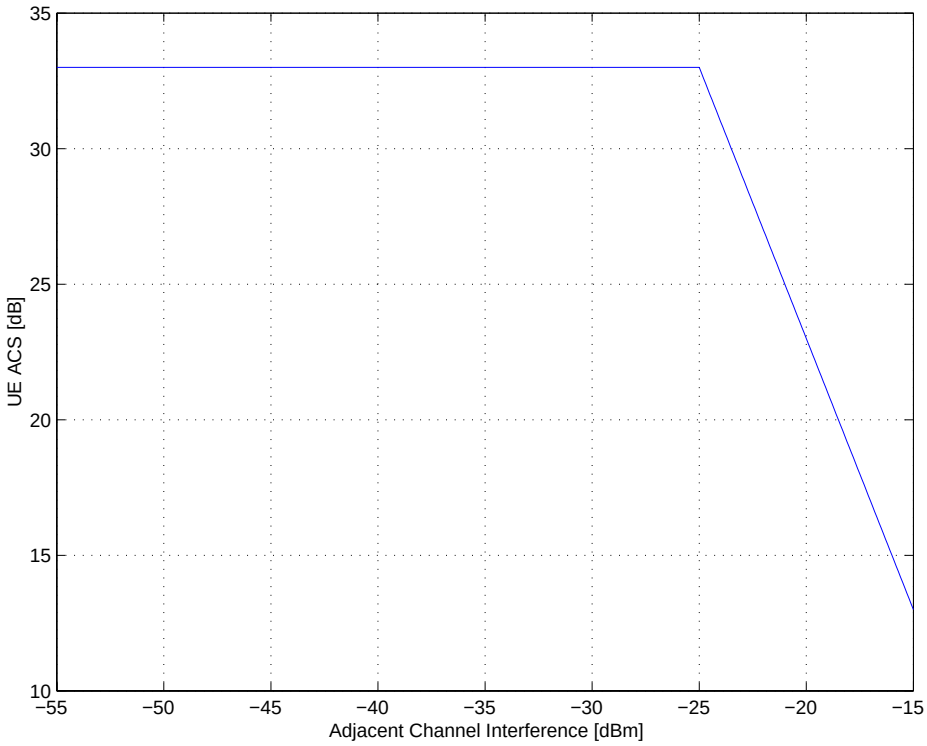
Figure 27c



8.1.5.3 UE ACS Mask Characteristic

All simulation results under this chapter are based on the assumption that if the experienced ACI is higher than the investigated value, the ACS performance will degrade graceful up to a certain level (here up to –15dBm).

Figure 27d



8.1.5.3.1 Macro-Micro with UE ACS Mask Characteristic

Figure 27e

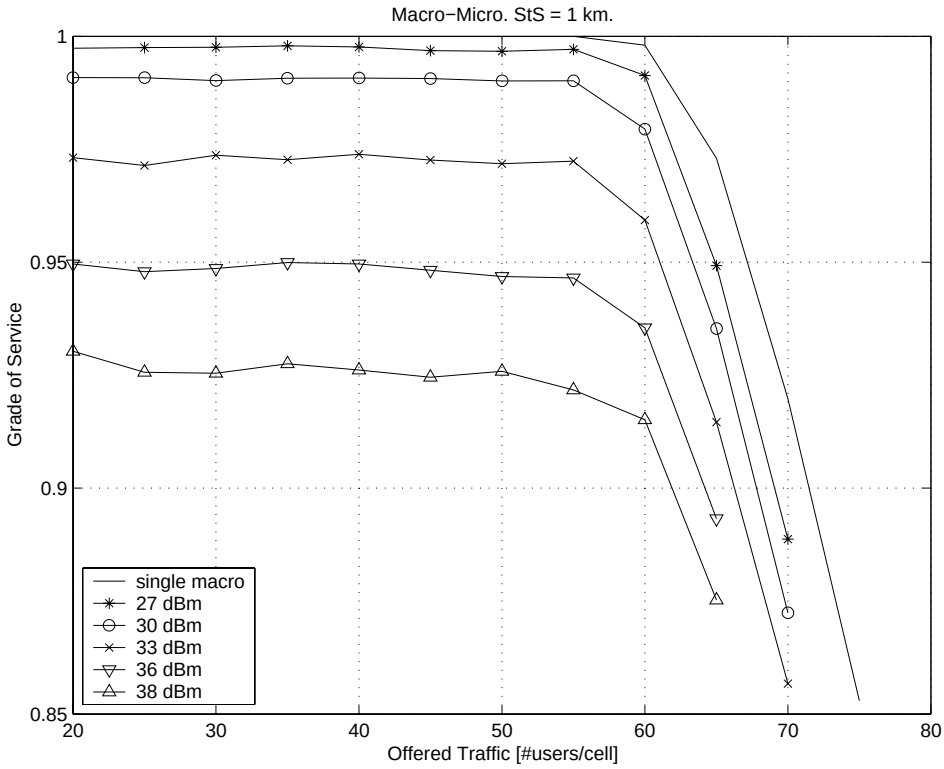


Figure 27e assumes a mask behaviour as shown in Figure 27d and is done for completeness with different Micro TX output power levels as indicated in the box in Figure 27e.

3GPP TSG RAN WG4 (Radio) Meeting #31 **R4-040186**

Beijing, China 10 - 14 May 2004

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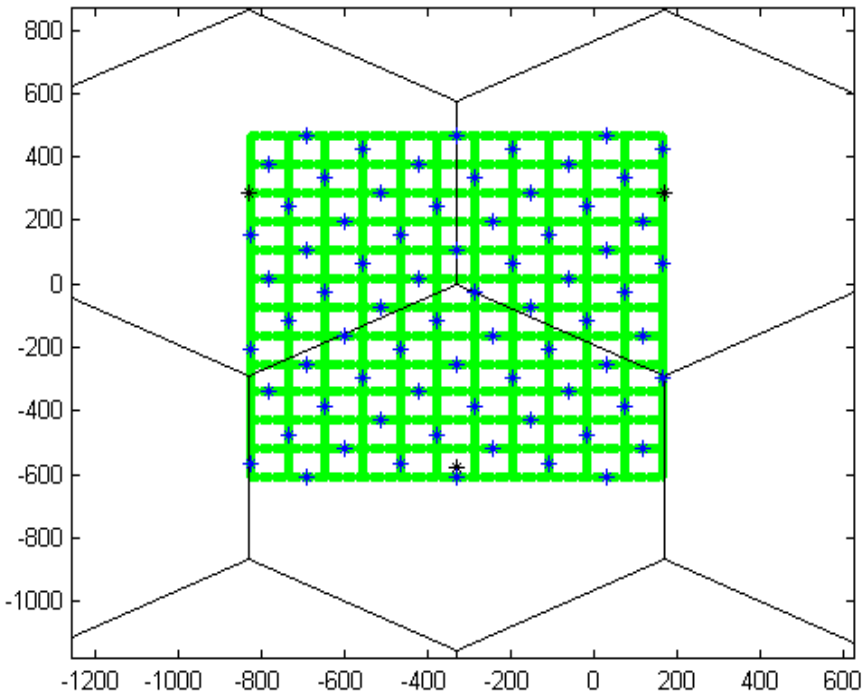

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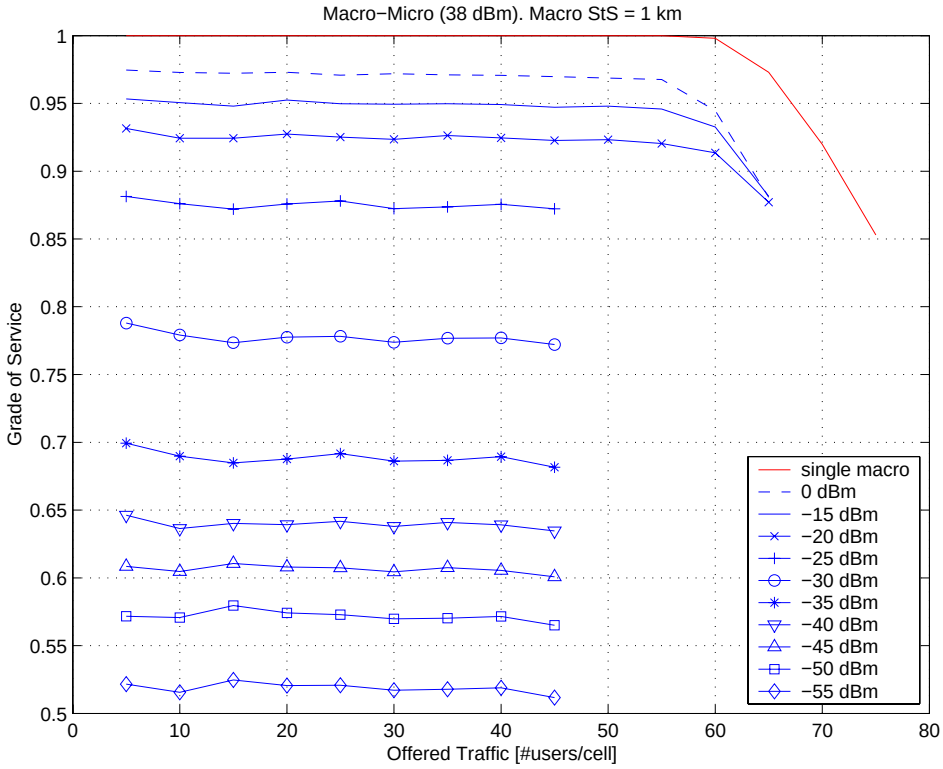

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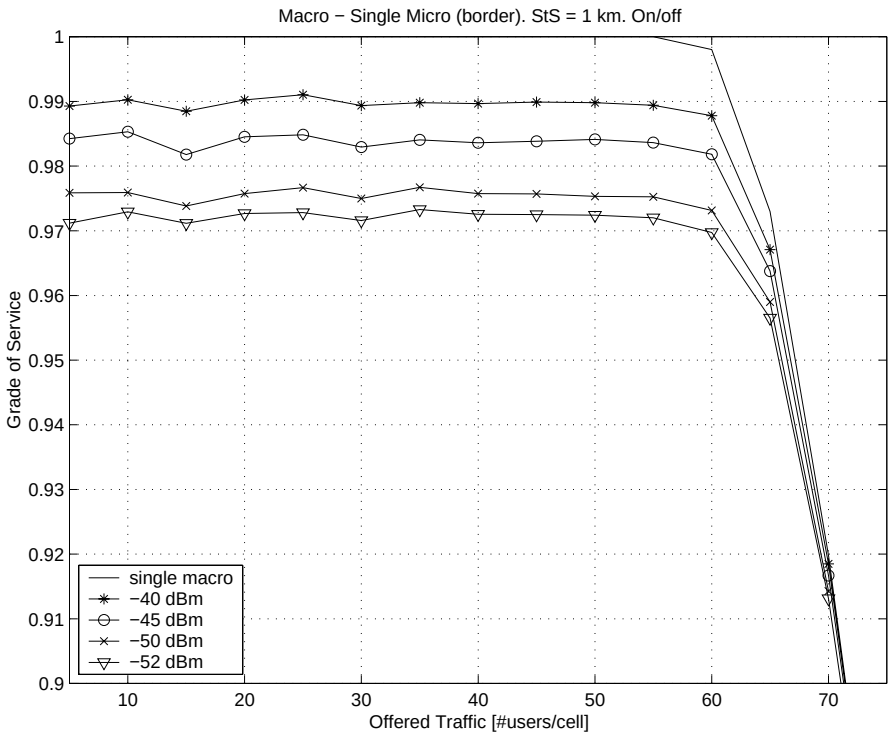

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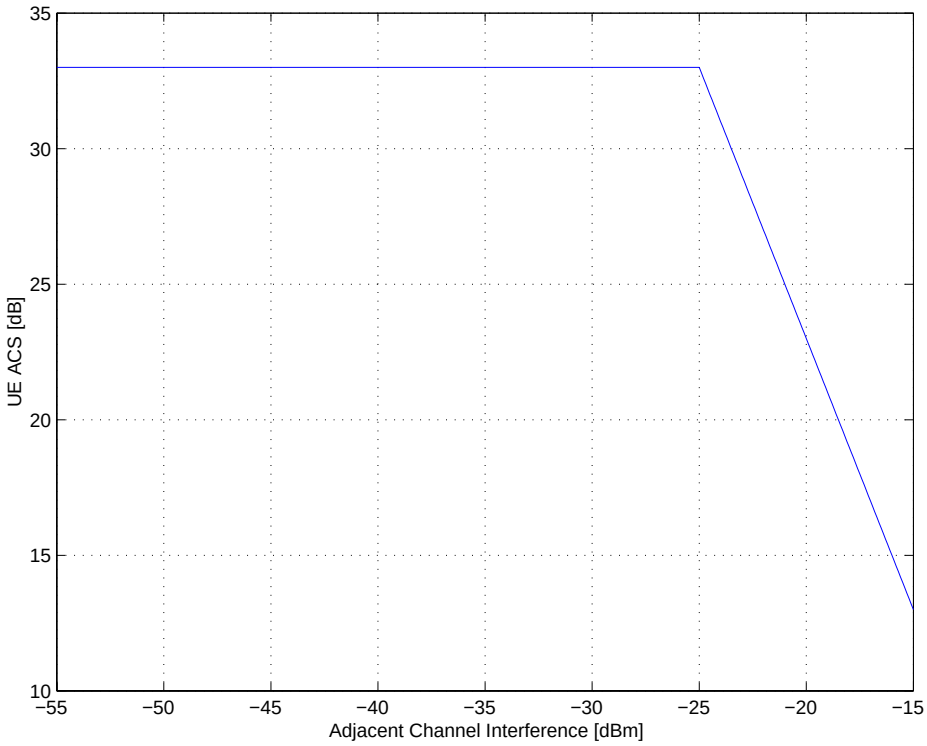

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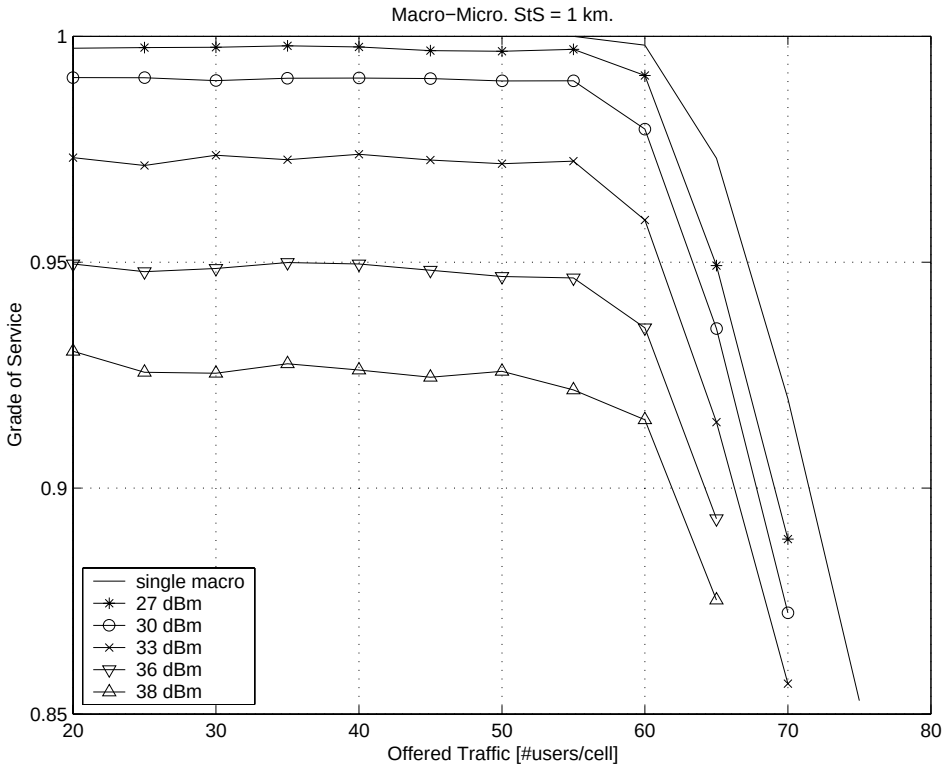

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