S3 Model   Mechanistic model of polarisome formation.

$$Bni1_c + Cdc42GTP_m \xrightarrow{B_{on}} Bni1_m + Cdc42GTP_m$$

$$Bni1_m \xrightarrow{B_{off}} Bni1_c$$

$$Actin_c + Bni1_m \xrightarrow{A_{on}} Actin_m + Bni1_m$$

$$Actin_m \xrightarrow{A_{off}} Actin_c$$

$$Spa2_c + Actin_m \xrightarrow{S_{on}} Spa2_m + Actin_m$$

$$Spa2_m \xrightarrow{S_{off}} Spa2_c$$

$$Bni1_c + Spa2_m \xrightarrow{B_{fb}} Bni1_m + Spa2_m$$
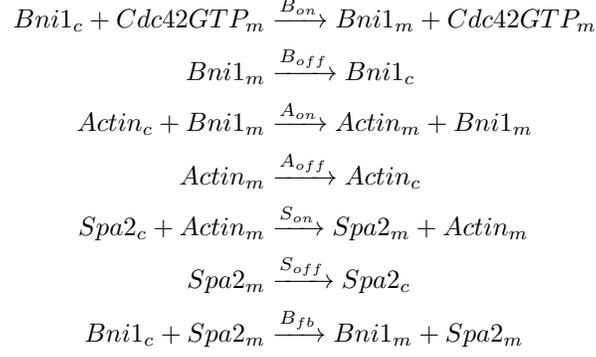
Added feedback between Cdc42 polarization and polarisome:

$$Cdc42GDP_c + Actin_m \xrightarrow{\beta_1} Cdc42GTP_m + Actin_m$$

$$Cdc42GDP_m + Actin_m \xrightarrow{\beta_1} Cdc42GTP_m + Actin_m$$
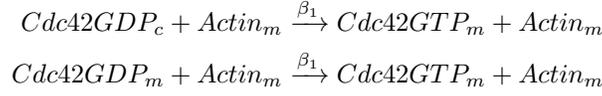
Parameter	Value	Description
D_m	$0.0053\ \mu m^2 s^{-1}$	Diffusion constant on membrane
D_a	$0.0\ \mu m^2 s^{-1}$	No actin diffusion on membrane
D_c	$50\ \mu m^2 s^{-1}$	Diffusion constant in cytoplasm
R	$2\ \mu m$	Radius of cell
N_B	1000	Total number of Bni1 molecules
N_S	5000	Total number of Spa2 molecules
N_A	40	Total number of Actin cables
B_{on}	$0.000256\ \mu m^3 s^{-1}$	Recruitment of Bni1 by Cdc42
B_{off}	$22.5\ s^{-1}$	Detachment of Bni1 from membrane
S_{on}	$4.55\ \mu m^3 s^{-1}$	Recruitment of Spa2 by Actin
S_{off}	$0.35\ s^{-1}$	Detachment of Spa2 from membrane
A_{on}	$0.197\ \mu m^3 s^{-1}$	Recruitment of Actin by Bni1
A_{off}	$1.57 * 500/(500 + Spa2_m)$	Detachment of Actin from membrane
B_{fb}	$0.0304\ \mu m^3 s^{-1}$	Recruitment of Bni1 by Spa2
β_1	$0.266\ \mu m^3 s^{-1}$	Recruitment of Cdc42 by Actin