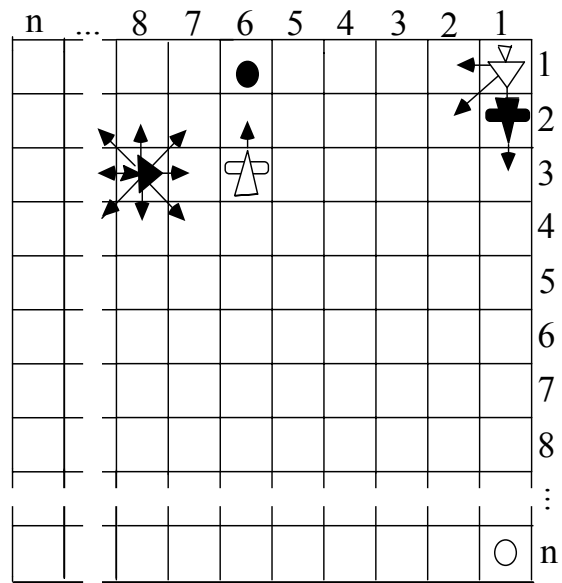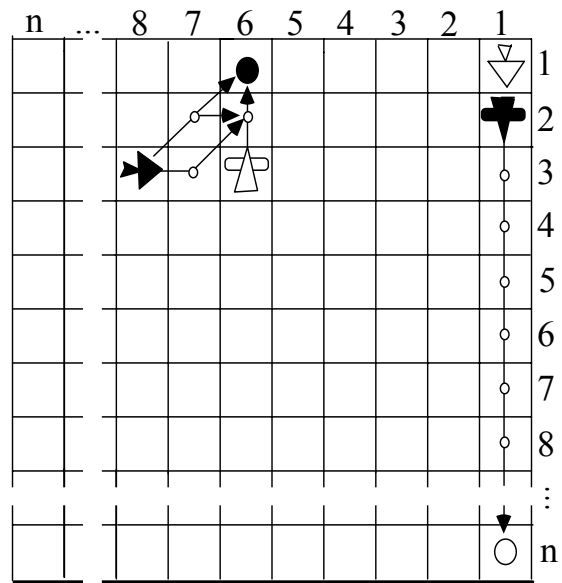# Concurrent Systems
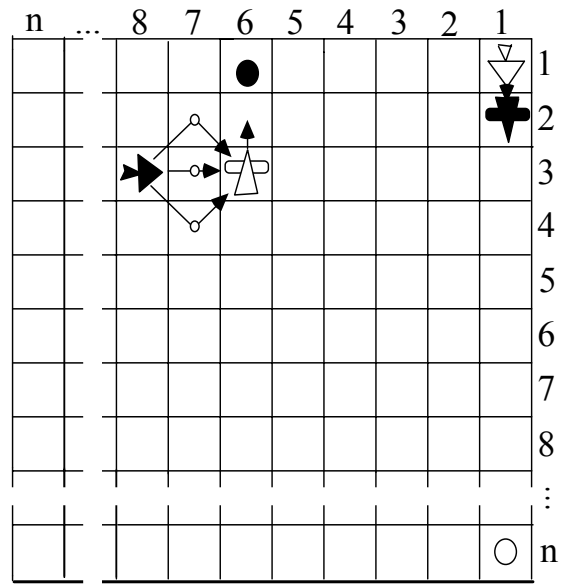
(More details can be found in Chapter 6 of the book on LG —
especially Sections 6.5, 6.6)

Totally Concurrent Model for n×n District

62-61 72-61
12-13 □ -1

62-61 72-61
11-22 12-13 □ -1

63-62 83-72
11-22 72-61 62-61 13-14
12-13 □ -1

62-61 13-14
22-33 □ -1

62-61 16-17
53-52 □ 0

22-33 13-14 62-61 14-15
□ -1

62-61 14-15
33-44 □ -1

33-44 14-15 44-53 15-16

61-62 □ -1

44-35 61-62 □ 0

15-16 □ -1

83-72 62-61 72-61
12-13 13-14 □ -1

62-61 72-61
11-12 13-14 □ -1

11-22 72-61 22-33 14-15 62-61 15-16
13-14 □ -1

62-61 15-16
33-44 □ -1

33-44 15-16 44-53 61-62 □ -1

44-35 61-62 □ -1

83-72 62-61 72-61
12-13 13-14 □ -1

62-61 72-61
22-33 13-14 □ -1

22-33 72-61 62-61 14-15
13-14 □ -1

62-61 14-15
33-44 □ -1

33-44 14-15 44-53 15-16 62-61 16-17
53-52 □ 0

61-62 □ -1

63-62
11-22 44-35 61-62 □ 0

15-16 □ -1

12-13 62-61 13-14
22-33 □ +1

83-72 22-13 12-13
62-61 72-61 □ 0

83-72 22-33 72-61 33-44 14-15 63-62 15-16 62-61 16-17
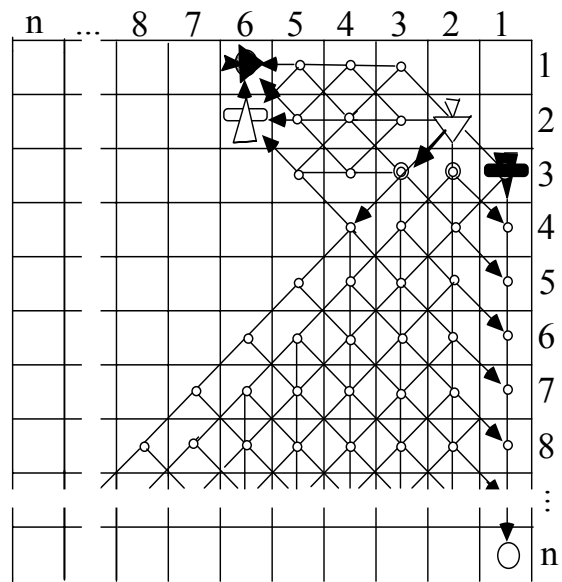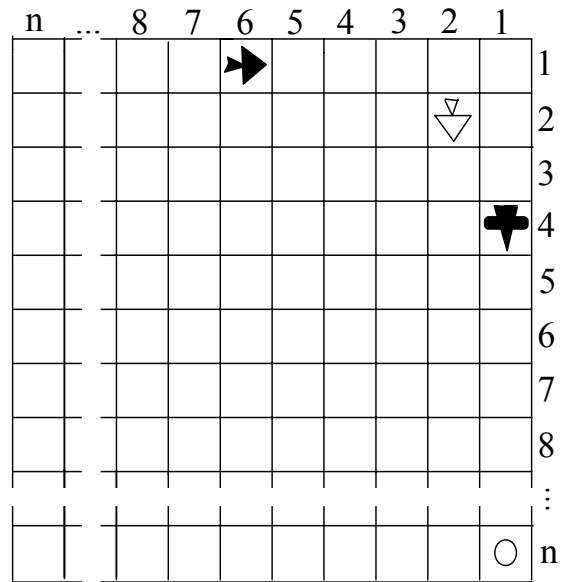11-22 12-13 13-14 44-53 53-52 □ 0

# Interpretation of Zones in the Start State

**States where the control Zone from (1, 1) to (6, 1) was detected (top)
and where it was included into the search (bottom)**
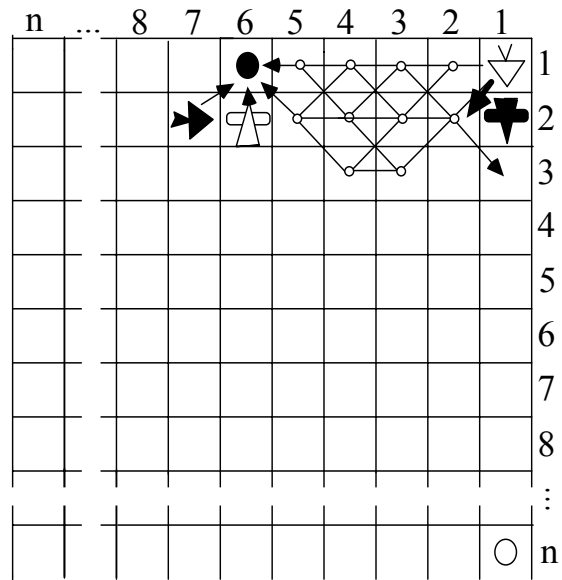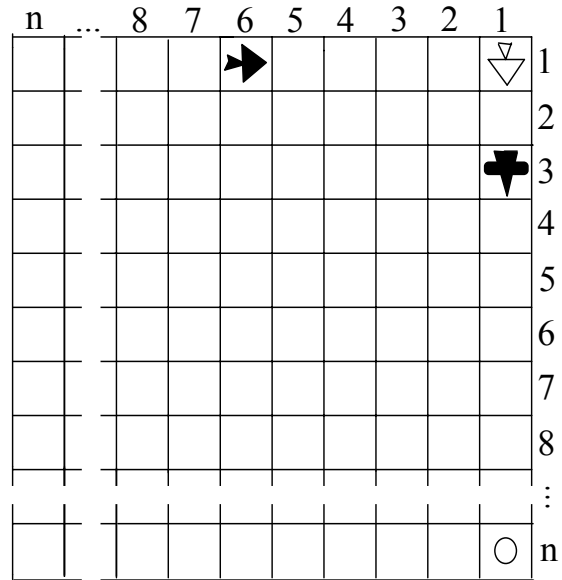
States where the control Zones from (2, 2) to (6, 2), (6, 1) were detected (top) and where they were included into the search (bottom)

States where the control Zones from (3, 3) to (6, 2), (6, 1) were detected (top) and where they were included into the search (bottom)
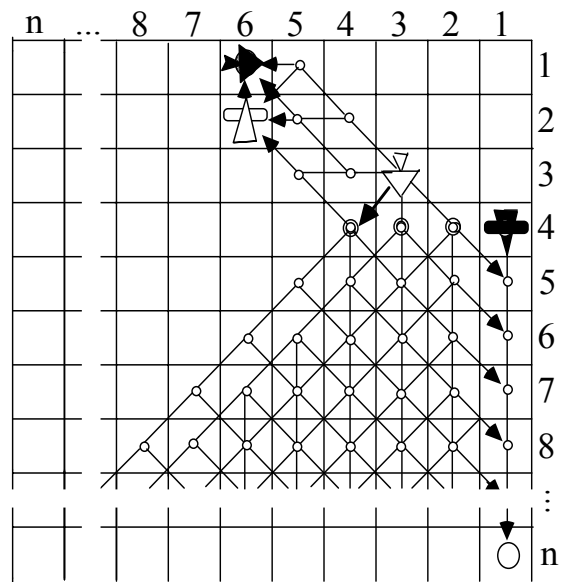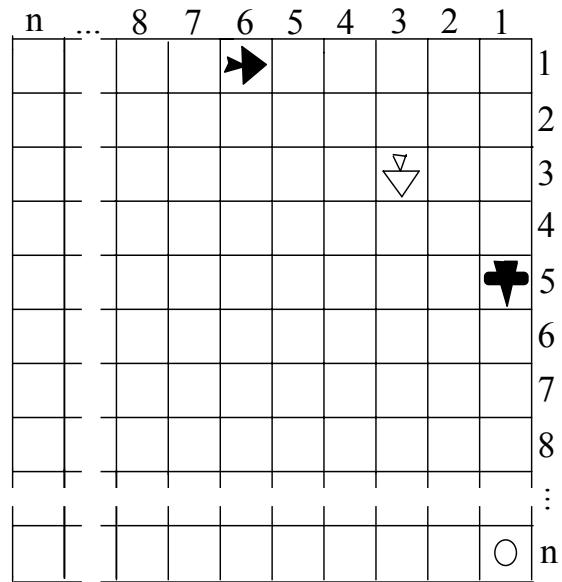
Search Tree for Totally Concurrent Model with n×n District

Unreduced Branching Factor	~ **324**
Required Depth	**n-1**
Required Tree Size	~ $\mathbf{324^{1/2(n-1)}}$
LG Branching Factor	~ **1.58**
LG Depth	**6**
LG Tree Size	~ **41**