## EXTENDED SUDOKU BOARD

For the easy application of the resolution method defined in

## "The Hidden Logic of Sudoku"

This new version of the extended Sudoku board uses the now standard lower case nrc-notation  $n_1r_1c_1...$ 

Using this extended board is very easy.

The four sub-boards contain exactly the same information content; they are just different viewpoints on it. The upper left board is the standard Sudoku board. The other three boards are auxiliaries allowing to uncover hidden relations. They can be built at any stage of the resolution process, using the following equivalences:

- $n_k$  is in cell  $r_i c_i$  of the left upper board;
- $c_i$  is in cell  $r_i n_k$  of the right upper board;
- $r_i$  is in cell  $c_i n_k$  of the left lower board;
- $s_q$  is in cell  $b_p n_k$  of the left lower board, where  $(r_i c_j$  and  $b_p s_q$  are respectively the rc and bs coordinates of the same cell). Once built, they are easily maintained by systematically asserting a value or eliminating a candidate from the four subboards at the same time. For details, see my book.

## GRILLE DE SUDOKU ETENDUE

Pour faciliter l'application de la méthode de résolution définie dans

"The Hidden Logic of Sudoku"

(La logique cachée du Sudoku)

Cette nouvelle version de la grille de Sudoku étendue utilise la désormais standard notation nrc en minuscules  $n_1r_1c_1...$ 

	cl	<i>c</i> 2	<i>c3</i>	c4	<i>c</i> 5	<i>c6</i>	<i>c</i> 7	c8	<i>c</i> 9		nl	n2	п3	n4	n5	n6	n7	n8	n9	
rI	n4 n5 n6	n4 n5 n6	n4 n5 n6	n1 n2 n3 n4 n5 n6 n7 n8 n9	n4 n5 n6	rI	c4 c5 c6	c4 c5 c6	c1 c2 c3 c4 c5 c6 c7 c8 c9	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	rI				
<i>r</i> 2	n4 n5 n6	n4 n5 n6	n4 n5 n6	n1 n2 n3 n4 n5 n6 n7 n8 n9	n4 n5 n6	r2	c4 c5 c6	c4 c5 c6	c1 c2 c3 c4 c5 c6 c7 c8 c9	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	r2				
r3	n4 n5 n6	n4 n5 n6	n4 n5 n6	n1 n2 n3 n4 n5 n6 n7 n8 n9	n4 n5 n6	n4 n5 n6		n4 n5 n6	n4 n5 n6	r3	c4 c5 c6	c4 c5 c6	c1 c2 c3 c4 c5 c6 c7 c8 c9	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	r3
r4	n4 n5 n6	n4 n5 n6	n4 n5 n6	n1 n2 n3 n4 n5 n6 n7 n8 n9	n4 n5 n6	r4	c4 c5 c6	c4 c5 c6	c1 c2 c3 c4 c5 c6 c7 c8 c9	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	r4				
<i>r</i> 5	n4 n5 n6	n4 n5 n6	n4 n5 n6	n1 n2 n3 n4 n5 n6 n7 n8 n9	n4 n5 n6	r5	c4 c5 c6	c4 c5 c6	c1 c2 c3 c4 c5 c6 c7 c8 c9	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6		c4 c5 c6	r5				
r6	n4 n5 n6	n4 n5 n6	n4 n5 n6	n1 n2 n3 n4 n5 n6 n7 n8 n9	n4 n5 n6	r6	c4 c5 c6	c4 c5 c6	c1 c2 c3 c4 c5 c6 c7 c8 c9	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	r6				
<i>r</i> 7	n4 n5 n6	n4 n5 n6	n4 n5 n6	n1 n2 n3 n4 n5 n6 n7 n8 n9	n4 n5 n6	<i>r7</i>	c4 c5 c6		c1 c2 c3 c4 c5 c6 c7 c8 c9	c4 c5 c6	c4 c5 c6		c4 c5 c6		c4 c5 c6	r7				
r8	n4 n5 n6	n4 n5 n6	n4 n5 n6	n1 n2 n3 n4 n5 n6 n7 n8 n9	n4 n5 n6	r8	c4 c5 c6	c4 c5 c6	c1 c2 c3 c4 c5 c6 c7 c8 c9	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	r8				
r9	n4 n5 n6	n4 n5 n6	n4 n5 n6	n1 n2 n3 n4 n5 n6 n7 n8 n9	n4 n5 n6	r9	c4 c5 c6	c4 c5 c6	c1 c2 c3 c4 c5 c6 c7 c8 c9	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	c4 c5 c6	r9				
	cl	<i>c</i> 2	<i>c3</i>	c4	<i>c</i> 5	<i>c</i> 6	<i>c</i> 7	c8	c9		nl	n2	n3	n4	n5	n6	n7	n8	n9	
n1	r1 r2 r3 r4 r5 r6 r7 r8 r9	r1 r2 r3 r4 r5 r6 r7 r8 r9	r1 r2 r3 r4 r5 r6 r7 r8 r9	r4 r5 r6	r1 r2 r3 r4 r5 r6 r7 r8 r9	r4 r5 r6	n1/b1	s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6	s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6	s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6	b1			
<i>n</i> 2	r1 r2 r3 r4 r5 r6 r7 r8 r9	r1 r2 r3 r4 r5 r6 r7 r8 r9		r1 r2 r3 r4 r5 r6 r7 r8 r9	r4 r5 r6	n2/b2	s4 s5 s6	s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9		s4 s5 s6		s4 s5 s6	s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6	<i>b2</i>				
п3	r1 r2 r3 r4 r5 r6 r7 r8 r9	r4 r5 r6	n3/b3	s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6	s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6	b3										
n4	r1 r2 r3 r4 r5 r6 r7 r8 r9	r1 r2 r3 r4 r5 r6 r7 r8 r9	r1 r2 r3 r4 r5 r6 r7 r8 r9		r1 r2 r3 r4 r5 r6 r7 r8 r9	r4 r5 r6	n4/b4		s1 s2 s3 s4 s5 s6 s7 s8 s9		s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6			s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6	<i>b4</i>			
n5	r1 r2 r3 r4 r5 r6 r7 r8 r9	r4 r5 r6	n5/b5	s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6	s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9		b5										
п6	r1 r2 r3 r4 r5 r6 r7 r8 r9	r4 r5 r6	n6/b6	s1 s2 s3 s4 s5 s6 s7 s8 s9		s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6	<i>b6</i>										
n7	r1 r2 r3 r4 r5 r6 r7 r8 r9	r1 r2 r3 r4 r5 r6 r7 r8 r9	r1 r2 r3 r4 r5 r6 r7 r8 r9	r4 r5 r6	r1 r2 r3 r4 r5 r6 r7 r8 r9	r4 r5 r6	n7/b7	s4 s5 s6	s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6	s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6	s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6	s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6	<i>b7</i>			
n8	r1 r2 r3 r4 r5 r6 r7 r8 r9	n8/b8	s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9	s4 s5 s6		s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9	s1 s2 s3 s4 s5 s6 s7 s8 s9		<i>b8</i>								
			r1 r2 r3		s1 s2 s3	s1 s2 s3		s1 s2 s3			s1 s2 s3	s1 s2 s3	s1 s2 s3	, ,						
n9	r1 r2 r3 r4 r5 r6 r7 r8 r9	r1 r2 r3 r4 r5 r6 r7 r8 r9		r4 r5 r6		r4 r5 r6 r7 r8 r9	n9/b9	s4 s5 s6 s7 s8 s9			s4 s5 s6 s7 s8 s9	s4 s5 s6 s7 s8 s9		<i>b9</i>						

© July 2007 by Denis Berthier