Now it remains to check that

$$\dim(*\Lambda \cap \underset{\overset{\shortparallel}{V^*_{n-(n-k)+i-a^*_i}}}{V^*_{k+i-a^*_i}}) \geq i.$$

Suppose $a_{m_p} < i \leq a_{m_{(p-1)}}$

$$\Rightarrow \quad a^*_{a_{m_{(p-1)}}} \leq a^*_i < a^*_{a_{m_p}}.$$

$\Rightarrow$ By the def of the smallest sequence,

$$a^*_i = a^*_{a_{m_{(p-1)}}} = m_{p-1}.$$

But since $\dim(*\Lambda \cap V^*_{k+a_{m_{(p-1)}}-a^*_{a_{m_{(p-1)}}}}) \geq a_{m_{(p-1)}} = m_{p-1}$

and $*\Lambda \cap V^*_{k+a_{m_{p-1}}-a^*_{a_{m_{p-1}}}} \supset *\Lambda \cap V^*_{k+i-a^*_i} \supset *\Lambda \cap V^*_{k+a_{m_p}-a^*_{a_{m_p}}}$

$$\shortparallel$$

$$*\Lambda \cap V^*_{k+a_{m_{(p-1)}}-\underset{m_{p-1}}{\overset{a^*_i}{\shortparallel}}}$$

Consider the following.

$$\dim(*\Lambda \cap V^*_{k+a_{m_{(p-1)}}-a^*_{a_{m_{(p-1)}}}}) \geq a_{m_{(p-1)}}$$

$$\dim(*\Lambda \cap V^*_{k+a_{m_{(p-1)}}-1-a^*_{a_{m_{p-1}}-1}})$$

$$\vdots$$

$$\dim(*\Lambda \cap V^*_{k+i-a^*_i})$$

$$\vdots$$

$$\dim(*\Lambda \cap V^*_{k+a_{m_p}-a^*_{a_{m_p}}}) \geq a_{m_p}.$$