

8. pielikums

Eksperimentu stenda spirāles šablona koordinātu punktu būvēšanas kods

```
using System;
using System.Collections.Generic;
using System.Drawing;

namespace UR10.Patterns
{
    public interface ISpiralBuilder
    {
        List<PointF> GetSpiralPoints(PointF center, float a, float angleOffset, float maxRadius);
    }

    //Code from http://csharpHelper.com/blog/2018/10/draw-an-archimedes-spiral-in-c/
    class SpiralBuilder : ISpiralBuilder
    {
        // Return points that define a spiral.
        public List<PointF> GetSpiralPoints(PointF center, float a, float angleOffset, float maxRadius)
        {
            // Get the points.
            List<PointF> points = new List<PointF>();
            float dtheta = (float)((double)Properties.Settings.Default.PatternDeltaTheta * Math.PI / 180);
            for (float theta = 0; ; theta += dtheta)
            {
                // Calculate r.
                float r = a * theta;

                // Convert to Cartesian coordinates.
                float x, y;
                PolarToCartesian(r, theta + angleOffset, out x, out y);

                // Center.
                x += center.X;
                y += center.Y;

                // Create the point.
                points.Add(new PointF((float)x, (float)y));

                // If we have gone far enough, stop.
                if (r >= maxRadius) break;
            }
            return points;
        }

        // Convert polar coordinates into Cartesian coordinates.
        private void PolarToCartesian(float r, float theta, out float x, out float y)
        {
            x = (float)(r * Math.Cos(theta));
            y = (float)(r * Math.Sin(theta));
        }
    }
}
```